

Fish Kills Caused by Pollution in 1975
Sixteenth Annual Report

(U.S.) Environmental Protection Agency
Washington, DC

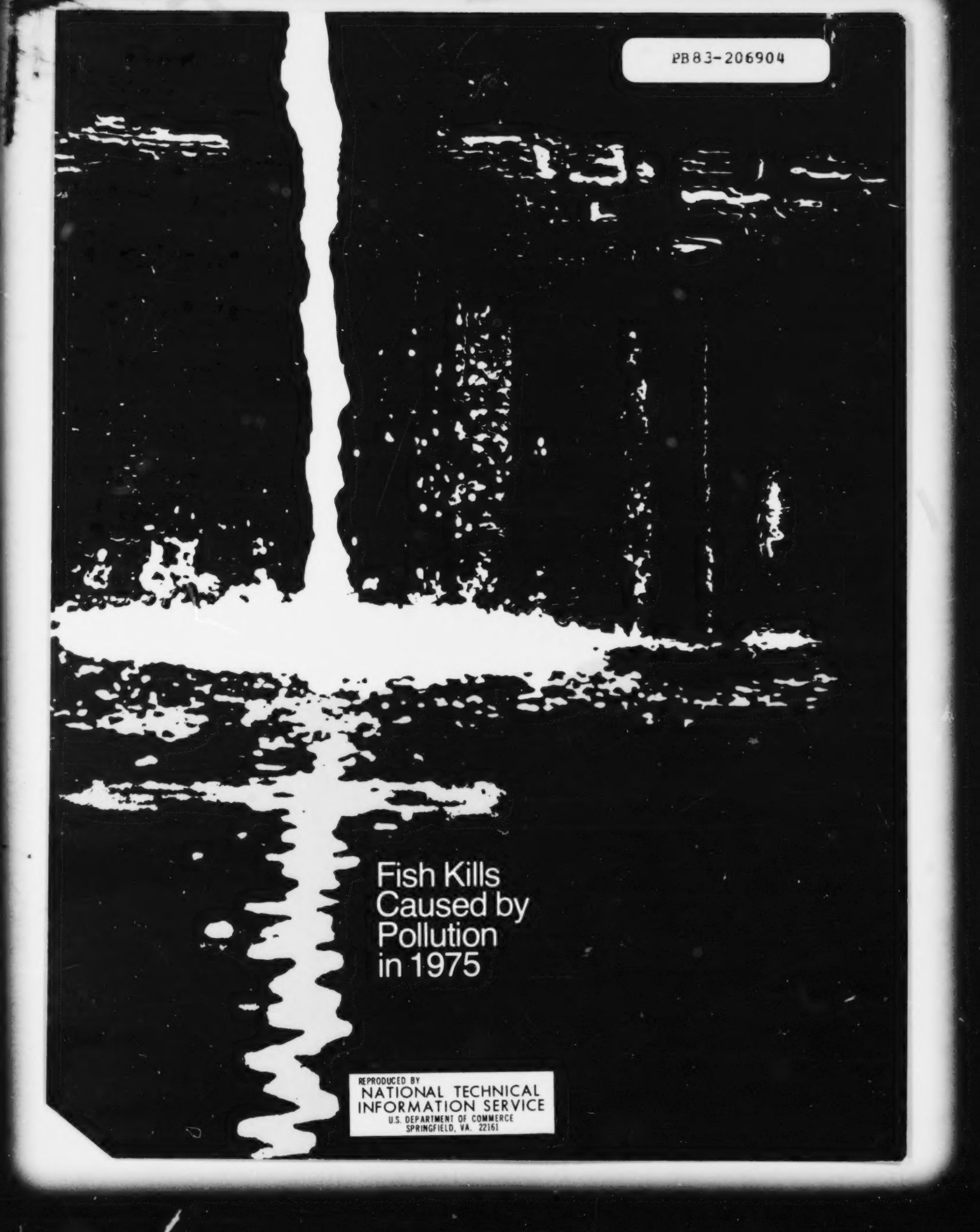
1977



U.S. Department of Commerce
National Technical Information Service

NTIS

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA 440/9-77-004	2.	3. Recipient's Accession No. PB83 206904
4. Title and Subtitle Pollution-Caused Fish Kills in 1975 Sixteenth Annual Report			5. Report Date 1977
7. Author(s)			6.
9. Performing Organization Name and Address U.S. Environmental Protection Agency Office of Water Planning and Standards Monitoring and Data Support Division			8. Performing Organization Rep. No. EPA 440/9-77-004
12. Sponsoring Organization Name and Address Same as above.			10. Project/Task/Work Unit No.
			11. Contract(C) or Grant(G) No. (C) (G)
			13. Type of Report & Period Covered National 6/1/75-12/31/75
			14.
15. Supplementary Notes The responsibility for continued publication of this report was transferred to the U.S. Environmental Protection Agency in 1970.			
16. Abstract (Limit: 200 words) The report is an analysis of pollution-caused fish kills compiled from data supplied by State officials. It includes analytical text and the following tables: major kills, historical summary, summaries by State, source, water body, kills within EPA regions, severity, type of water, month, and duration. Also includes a cumulative listing of the reports of fish kills-cause identifiable and cause unknown.			
17. Document Analysis a. Descriptors Fish Kills, Water pollution, State, sources b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement: Release unlimited		19. Security Class (This Report) Unclassified	21. No. of Pages 84
		20. Security Class (This Page) Unclassified	22. Price



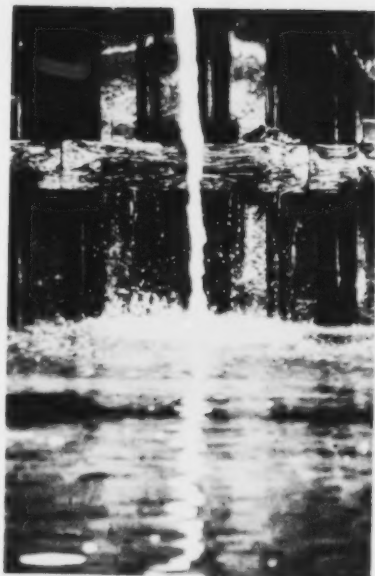
PB83-206904

Fish Kills
Caused by
Pollution
in 1975

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

**Fish Kills
Caused by
Pollution
in 1975**

**Sixteenth
Report**



**U.S.
Environmental
Protection
Agency**

**Office of
Water Planning
and Standards**

**Monitoring and
Data Support
Division
Washington D.C.
20460**

**Project Manager
Edward Biernacki**

Contents

ii

Foreword _____ 1

Summary-Fish Reported Killed in 1975 _____ 3

Basic Statistics _____ 4

Total Fish Reported Killed _____ 6

Major Fish Kills _____ 8

Fish Killed, by Type of Water Body _____ 9

Fish Killed by Type of Water _____ 10

Fish Kills, by Month _____ 11

Fish Kills, by Duration and Severity _____ 12

Regional Data

Agricultural Operations _____ 12

Municipal Operations _____ 14

Industrial Operations _____ 14

Transportation Operations _____ 14

Construction or Other Operations _____ 14

Summary of Reported Fish Kills, Nationally and by State _____ 16

Tables

1 Historical Summary of Pollution-Caused Fish Kills, June 1960-December 1975 _____ 4

2 Fish Kill Summary by Source of Pollution, 1975 _____ 6

3 Pollution-Caused Fish Kill Summary by State, 1975 _____ 7

4 Major Kills—100,000 or Over—1975 _____ 8

5 Fish Kill Summary by Type of Water Body, 1975 _____ 9

6 Fish Kill Summary by Type of Water, 1975 _____ 10

7 Fish Kill Summary by Month, 1975 _____ 11

8 Fish Kill Summary by Duration and Severity of Kill, 1975 _____ 13

9 Number of Fish Kill Reports by Source of Pollution Within EPA Regions, 1975 _____ 13

10 Report of Fish Kills, 1975—Cause Identified _____ 65

11 Report of Fish Kills, 1975—Cause Not Specifically Identified _____ 72

Figures

1 Cumulative Reported Fish Killed, 1961 to 1975 _____ 7

2 Percentage of Fish Kills Reported in United States, by Cause-1975 _____ 17

3 State of Alabama-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 18

4 State of Arkansas-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 19

5 State of California-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 20

6 State of Colorado-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 21

7 State of Connecticut-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 22

8 State of Delaware-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 23

9 State of Florida-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 24

10 State of Georgia-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 25

11 State of Hawaii _____ 26

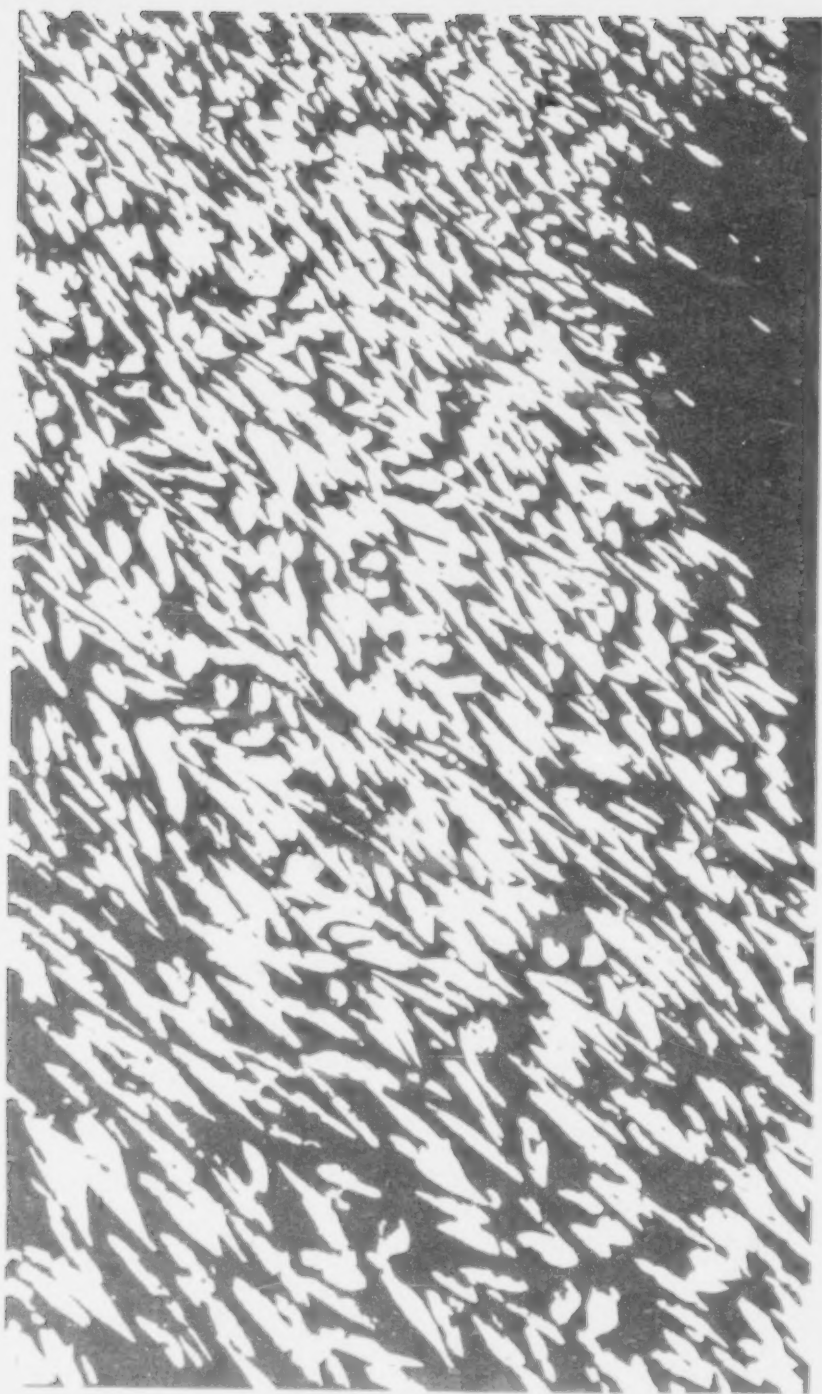
12 State of Idaho-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 27

13 State of Indiana-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 28

14 State of Iowa-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 29

15 State of Illinois-Reported Fish Kills, by Size and Percentages of Causes-1975 _____ 30

16 State of Kansas-Reported Fish Kills, by Size and Percentages of Causes-1975	31	32 State of New York-Reported Fish Kills, by Size and Percentages of Causes-1975	47	45 State of Washington-Reported Fish Kills, by Size and Percentages of Causes-1975	60
17 State of Kentucky-Reported Fish Kills, by Size and Percentages of Causes-1975	32	33 State of North Carolina-Reported Fish Kills, by Size and Percentages of Causes-1975	48	46 State of West Virginia-Reported Fish Kills, by Size and Percentages of Causes-1975	61
18 State of Louisiana-Reported Fish Kills, by Size and Percentages of Causes-1975	33	34 State of Ohio-Reported Fish Kills, by Size and Percentages of Causes-1975	49	47 State of Wisconsin-Reported Fish Kills, by Size and Percentages of Causes-1975	62
19 State of Maine-Reported Fish Kills, by Size and Percentages of Causes-1975	34	35 State of Oklahoma-Reported Fish Kills, by Size and Percentages of Causes-1975	50	Appendices	
20 State of Maryland-Reported Fish Kills, by Size and Percentages of Causes-1975	35	36 State of Oregon-Reported Fish Kills, by Size and Percentages of Causes-1975	51	Introduction	75
21 State of Massachusetts-Reported Fish Kills, by Size and Percentages of Causes-1975	36	37 State of Pennsylvania-Reported Fish Kills, by Size and Percentages of Causes-1975	52	Appendix A State Agencies	76
22 State of Michigan-Reported Fish Kills, by Size and Percentages of Causes-1975	37	38 State of South Carolina-Reported Fish Kills, by Size and Percentages of Causes-1975	53	Appendix B Report of Pollution-Caused Fish Kill (Sample Form)	78
23 State of Minnesota-Reported Fish Kills, by Size and Percentages of Causes-1975	38	39 State of South Dakota-Reported Fish Kills, by Size and Percentages of Causes-1975	54	Appendix C Glossary-Sources of Pollution by Type of Operation	79
24 State of Mississippi-Reported Fish Kills, by Size and Percentages of Causes-1975	39	40 State of Tennessee-Reported Fish Kills, by Size and Percentages of Causes-1975	55		
25 State of Missouri-Reported Fish Kills, by Size and Percentages of Causes-1975	40	41 State of Texas-Reported Fish Kills, by Size and Percentages of Causes-1975	56		
26 State of Montana-Reported Fish Kills, by Size and Percentages of Causes-1975	41	42 State of Utah-Reported Fish Kills, by Size and Percentages of Causes-1975	57		
27 State of Nebraska-Reported Fish Kills, by Size and Percentages of Causes-1975	42	43 State of Vermont-Reported Fish Kills, by Size and Percentages of Causes-1975	58		
28 State of Nevada-Reported Fish Kills, by Size and Percentages of Causes-1975	43	44 State of Virginia-Reported Fish Kills, by Size and Percentages of Causes-1975	59		
29 State of New Hampshire-Reported Fish Kills, by Size and Percentages of Causes-1975	44				
30 State of New Jersey-Reported Fish Kills, by Size and Percentages of Causes-1975	45				
31 State of New Mexico-Reported Fish Kills, by Size and Percentages of Causes-1975	46				



Foreword

1

The annual fish kill report represents the combined voluntary efforts of private individuals, State fish and game, health, and conservation officers, and water pollution control officials at the State and Federal level. Usually, a fish kill is first noticed by a fisherman, camper, or other private citizen, who informs a warden or other State official. In most cases, the State agency then sends trained investigators to identify the cause and size of the kill. Where water pollution is determined or suspected to be the cause, the State submits a report to the Environmental Protection Agency (EPA).

It is essential that a fish kill be reported and investigated immediately in order to determine the source of pollution and the polluting agent. Dead fish may be washed downstream from the source of pollution. The polluting agent may be diluted by fast flowing water, making on-site investigation difficult or even impossible. Hot weather conditions decompose fish tissue, also making it difficult to identify a polluting agent. Since the investigator can count or estimate only those fish which lie on or near the surface, the number of fish reported killed is almost always a conservative figure. In some cases, as much as 80 percent of the dead fish cannot be counted due to turbid water, or because the fish have either sunk to the bottom of the water body or have been washed away from the site of the kill.

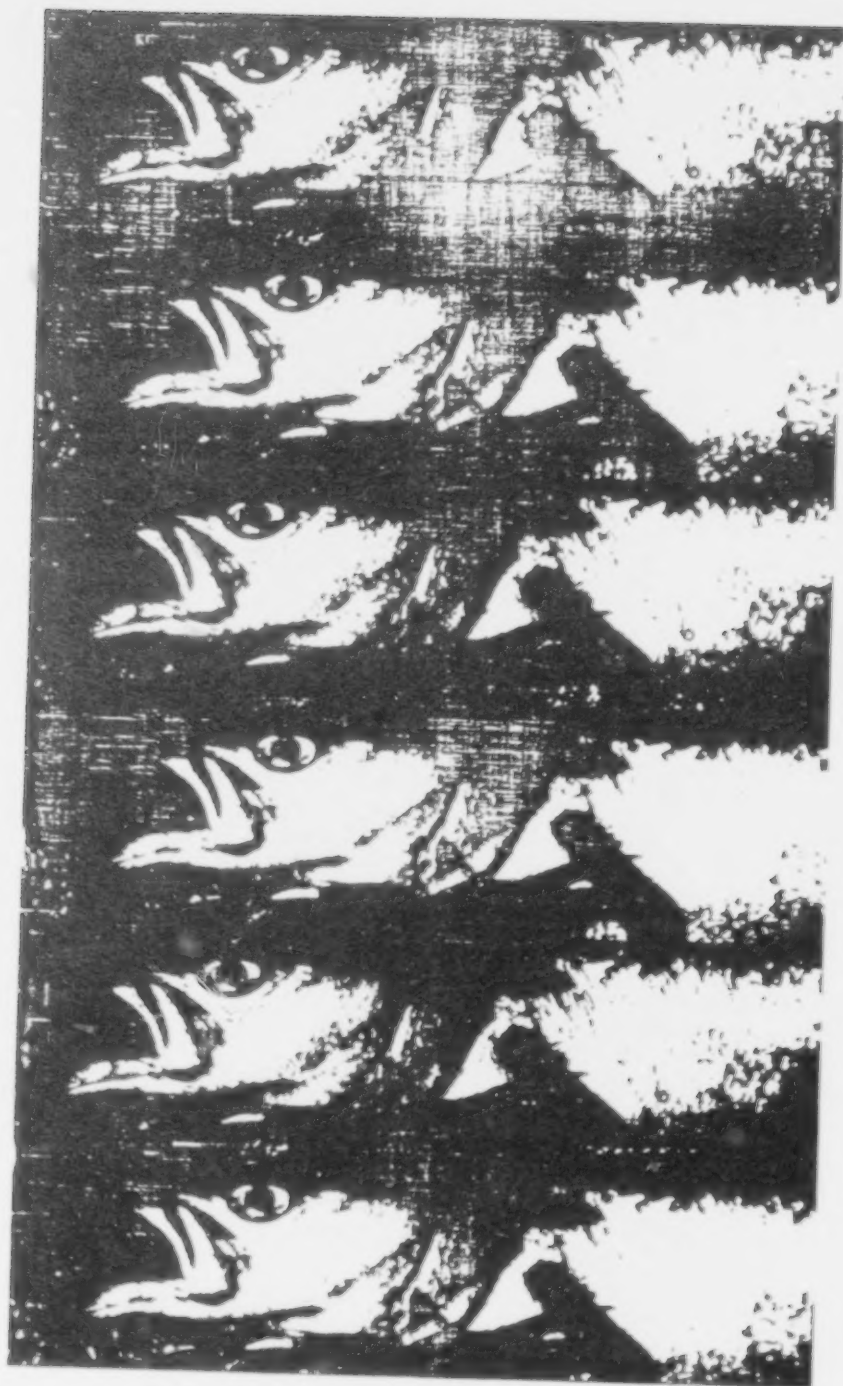
The reporting system depends, to a large extent, upon individuals in the field making State officials aware of fish kills and upon the States'

continuing voluntary submission of reports to the EPA. It is, therefore, quite likely that the large increases in reports for 1971, 1972, 1973, and 1974 over earlier years are a result of increased public awareness of pollution and its effects. In an effort to further increase this awareness and to encourage individuals to report kills to State officials we are including in Appendices A, B, and C to this report:

□Appendix A—A list of State agencies who should be notified of kills;

□Appendix B—A reproduction of the report form to show information desired; and,

□Appendix C—A definition of the types of operations identified as pollutant sources.



Summary
Fish Reported
Killed in 1975

3

The following is a short summary of significant statistics of fish kills reported in 1975.

□ All States Reported in 1975

For the fourth time since the inception of the annual pollution-caused fish kill reporting system in 1960, every State in the Union has participated. Five participating States reported no fish kills.

□ The Number of Fish Kill Reports for 1975 Continued to Decrease From the Peak Year 1971

For the fourth year in a row, the total number of reports showed a downward trend from the previous year. Nevertheless, the number received in 1975 (624) was greater than the number of reports received for any year before 1970 with the exception of 1965.

□ Over 471 Million Fish Reported Killed Since 1960

The 16.1 million fish reported killed in 1975 brought the cumulative total of all fish reported killed by water pollution since 1960 to 471 million. The number killed in 1975 showed an 87 percent decrease from reported kills in 1974, when a record was set for the number of fish reported killed in any one year—119.1 million.

□ Where Causes Were Identified, Industrial Operations Led All Other Pollution Operations as Causing the Greatest Number of Fish Kills in 1975

In 1975, the 122 fish kill reports associated with industrial operations led all other known

pollution sources, but still amounted to 27 percent less than the 168 industrial incidents reported in 1974.

□ Unknown (Unidentified) Operations Accounted for More Reports Than Any Other Category

The 169 reports in the unknown operations category represented 25 percent of all reports submitted in 1975.

□ Municipal Operations Killed More Fish Than Any Other Pollution Source in 1975

The 10.4 million fish killed by pollution from municipal operations represent 64 percent of the 16.1 million fish reported killed in 1975.

□ The Majority of the Reports Indicate That Less Than 10,000 Fish Were Killed Per Incident in 1975

In 84 percent of the incidents reported, the size of the kill was less than 10,000 fish. The total number of reported fish killed in these incidents however, was less than 4 percent of the 16.1 million reported fish killed in all incidents in 1975.

Basic Statistics

4

In 1975, 624 fish kill reports were submitted (Table 1). Of these, 543 reports (87 percent of the total) stated the number of fish killed. In the remaining 81 of the 624 reports submitted, fish losses were either not stated, or were not expressed in numerical terms. Counting only the 543 reports, an estimated 16.1 million fish were killed in 1975 (Table 2).

From 1961 through 1975, the estimated number of fish killed annually ranged from a low of 6.9 million in 1963 to a record high of 119 million in 1974. In 1974, the 47 million fish reported killed in Back River, near Essex, Maryland eclipsed the previous record high for one incident of 37.8 million fish reported killed in 1962 near San Diego Harbor, California.

Excluding the unusually high 119.1 million fish killed in 1974 and the 73.6 million killed in 1971, the average number of fish killed for the twelve remaining years was 21.4 million. The 16.1 million fish reported killed shows 1975 as the eighth highest year, but the number is lower than the annual average.

In 1975, as in previous years, most of the incidents were small—that is, they killed fewer than 10,000 fish apiece. Most fish were killed in very few incidents. For instance, 75 percent of the fish killed were reported killed in only three incidents (5 percent) of the 624 reports (Table 1).

In 1975, sources of pollution were identified in 456 of the 624 reports. These kills are listed individually in Table 10. The 168 kills for which the pollution source could not be positively identified are listed in Table 11.

	1960 ²	1961	1962	
Number of States responding	38	45		
Number of reports	289	413		
Reports which state number of fish killed	151	265		
Total reported number of fish killed	6,035,000	14,910,000	44,001,000	
Average size of kill ¹	2,925	6,535	5,700	
Largest kill reported	5,000,000	5,387,000	3,180,000	
Number of reported incidents for each pollution source operation				
Agricultural	79	74		
Industrial	103	169		
Municipal ³	24	52		
Transportation	0	0		
Other	33	58		
Unknown	50	60		
Total reports	289	413		
Number of reports and fish killed by size grouping	No reports	No fish (millions)	No reports	No fish (millions)
1,000,000 or more	1	5.0	4	12.6
100,000 to 1,000,000	3	0.53	5	0.85
10,000 to 100,000	15	0.31	45	1.05
1,000 to 10,000	64	0.18	107	0.34
0 to 1,000	68	0.02	104	0.03
No size reported for incident	138		148	
Average duration of kill in days		2.95		2.64

¹ Derived after excluding reports of 100,000 kills or more as being unrepresentative

² Reporting system in effect for last six months of 1960

³ Municipal operations include electric power-generating stations

¹ Derived after excluding reports of 100,000 kills or more as being unrepresentative.

² Reporting system in effect for last six months of 1960.

³ Municipal operations include electric power-generating stations.

Table 1

Contains historical data for the sixteen years that fish kill reports have been received. The table summarizes the following: The number of states reporting; the number of reported pollution-caused fish kill incidents; the number of reports which specify how many fish died; the reported number of fish killed; the largest single fish kill for each year; the number of reports for each pollution source operation; and a breakdown of fish killed by size of kill. The number of incidents and the numbers of fish killed are probably understated because of incomplete reporting and the difficulties of estimating numbers of dead fish. Also, 13 percent of the reports do not specify how many fish were killed.

Table 1—Historical Summary of Pollution-Caused Fish Kills, June 1960-December 1975

1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975											
38 442 304	40 590 470	44 625 520	46 532 453	40 454 364	42 542 469	45 594 492	45 635 563	46 860 759	50 760 697	50 749 703	50 721 648	50 624 543											
37 000 7 775 00 000	22 914 000 5 490 7 887 000	12 140 000 4 310 3 000 000	9 614 000 5 620 1 000 000	11 291 000 6 460 6 549 000	15 815 000 6 015 4 029 000	41 166 000 5 860 25 527 000	22 290 000 6 412 3 240 000	73 670 000 6 154 5 500 000	17 717 000 4 639 2 922 000	37 814 000 5 527 10 000 000	19 052 000 6 532 47 112 000	16 111 210 3 879 10 000 000											
84 199 60 17 27 55 442	131 193 120 26 17 103 590	114 244 125 27 23 92 625	88 195 87 27 38 97 532	87 139 91 23 35 79 454	77 177 122 39 23 104 542	117 199 84 32 33 129 594	108 213 120 28 28 138 635	132 231 162 52 64 219 860	113 189 167 56 72 163 760	161 196 146 65 56 125 749	145 168 169 40 74 125 721	118 122 90 47 78 169 624											
No fish (mil- ions)	No re- ports	No fish (mil- ions)	No re- ports	No fish (mil- ions)	No re- ports	No fish (mil- ions)	No re- ports	No fish (mil- ions)	No re- ports	No fish (mil- ions)	No re- ports	No fish (mil- ions)											
2.0 2.68 1.82 0.41 0.03	5 15 59 167 224 120	16.9 3.82 1.65 0.49 0.07	3 17 63 202 235 105	5.4 4.62 1.42 0.59 0.07	2 23 58 185 185 79	2.0 5.48 1.53 0.55 0.05	1 7 49 143 164 90	6.5 2.66 1.58 0.46 0.05	3 30 179 0.48 0.06	4 9 81 165 233 102	35.1 3.15 2.06 0.52 0.06	5 26 91 198 243 72	11.4 1.44 2.73 0.62 0.07	28 26 124 266 315 101	63.0 6.37 3.33 0.86 0.10	6 27 81 216 367 63	8.97 5.43 2.60 0.62 0.09	6 19 88 251 339 46	29.53 4.65 2.74 0.81 0.09	6 20 110 187 325 73	107.6 7.1 3.6 0.6 0.1	3 9 65 173 293 81	12.00 1.87 1.62 0.57 0.07
3.18	2.44	2.57	2.71	3.34	2.99	3.11	3.25	3.35	3.40	2.72	3.58	2.18											

6 Total Fish Reported Killed

The 16.1 million fish reported killed in 1975 brought the total estimated count of fish killed (Figure 1) to 468.6 million in 7,202 separate incidents since the first full year of reporting (1961). These 7,202 separate incidents, plus 1,606 reported incidents which did not state the number of fish killed brought the total incidents for the 1961-1975 period to 8,808.

A total of 45 States reported at least one fish kill incident (Table 3). The remaining five States (Alaska, Arizona, North Dakota, Rhode Island, and Wyoming) stated they had no recorded incidents of pollution-caused fish kills for 1975. Three States (California, Missouri and Ohio) accounted for 31 percent of the total incidents.

Source of pollution	Total reports	Reports specifying number of fish killed	
		No. of reports	No. of fish
Agricultural			
Insecticides	63	52	221,194
Fertilizers	16	14	186,951
Manure-silage drainage	39	35	362,597
Subtotal	118	101	770,742
Industrial			
Mining	20	19	263,768
Food products	20	18	56,559
Paper products	11	11	30,382
Chemicals	29	26	95,711
Petroleum	23	20	57,412
Metals	6	6	300,974
Combinations			
Other	13	11	87,903
Subtotal	122	111	892,709
Municipal			
Sewerage systems	70	66	353,457
Refuse disposal	2	2	1,612
Water systems	6	5	1,944
Swimming pool	3	3	375
Power	9	9	10,021,015
Subtotal	90	85	10,378,403
Transportation			
Rail	5	4	15,594
Truck	30	30	237,066
Barge or boat			
Pipeline	12	10	213,364
Subtotal	47	44	466,024
Other operations	78	64	435,335
Unknown	169	138	3,167,997
Total	624	543	16,111,210

Table 2

Summarizes fish kills for 1975 by major and individual pollution sources, and provides further information on fish killed in the game and non-game categories by major pollution sources. Average size of fish kill for each major source is also included. Kills from natural causes are not included.

Figure 1

OVER 455 MILLION FISH WERE REPORTED KILLED BY POLLUTION.....over a 15 year period. This graph summarizes the reported number of fish killed for the 1961-1975 period. The first reporting year, 1960 was excluded since reports were not received for a full year. Many more dead fish probably go unreported due to the difficulties of estimating, and because they were not investigated immediately. This total is also low since 13 percent of the reports are not included because they did not state the number of fish killed.

Table 3

Summarizes data from the 45 states which reported one or more pollution-caused fish kill incidents. Of the 624 reports submitted, 543 indicated the number of fish killed. The remaining 81 reports did not specify the number of fish killed. The table also shows the number of reports for incidents that occurred in rivers, lakes, and coastal waters.

Figure 1—Cumulative Reported Fish Killed, 1961 to 1975

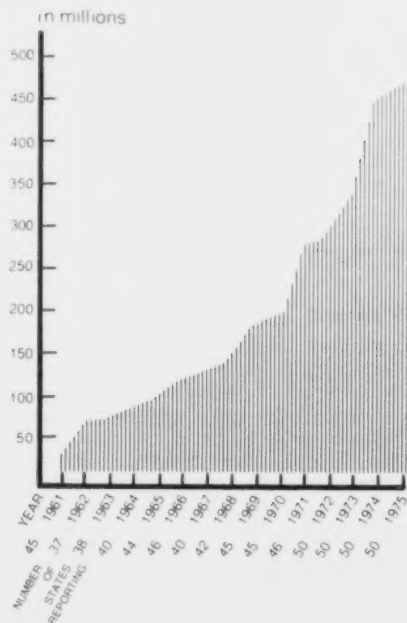


Table 3—Pollution-Caused Fish Kill Summary by State, 1975

State	Total re-ports	Reports specifying number of fish killed		Number of reports and water surfaces affected					
		Number of reports	Number of fish	River		Lake		Coastal Waters*	
				Number of reports	Number of miles of reports	Number of reports	Number of acres	Number of reports	Number of miles
Alabama	14	13	114,508	11	21	3	375		
Arkansas	25	4	9,800	10		15	12		
California	52	51	297,770	31	14	16	55	5	9
Colorado	4	4	1,005,905	4					
Connecticut	2	2	1,650	2					
Delaware	5	5	8,141	3		2	6		
Florida	30	20	99,585	35	22	209	1		
Georgia	9	6	14,600	65	3	15			
Hawaii	1	1	1,000						
Idaho	1	1	275	2					
Illinois	24	22	400,787	19	78	5	13		
Indiana	21	21	36,451	21	67				
Iowa	3	3	1,000	3	10				
Kansas	6	8	10,679	7	27	1	82		
Kentucky	1	5	1,5928	7	38				
Louisiana	1	9	66,589	15	58				
Maine	3	3	750	2	1				
Maryland	12	10	34,955	9	23	2	1	720	
Massachusetts	10	10	59,195	7	13	3	25		
Michigan	13	13	6,791	10	13	3	12		
Minnesota	5	4	7,958	4	11	1			
Mississippi	3	3	39,000	3	22				
Missouri	39	32	311,347	35	90	4	4		
Montana	4	4	7,750	1	1	3	848		
Nebraska	18	16	40,846	9	51	9	2,826		
Nevada	2	2	22,500	1	3	1	250		
New Hampshire	4	4	1,469	2	1	2	340		
New Jersey	1	1	1,200						
New Mexico	4	3	2,100	3	40	1	20		
New York	20	17	99,225	19	71	1	1		
North Carolina	19	18	28,108	14	45	5	21		
Ohio	80	80	347,077	76		4			
Oklahoma	21	12	250,683	12	25	9	136		
Oregon	4	4	37,771	4	8				
Pennsylvania	30	30	162,112	30	59				
South Carolina	2	2	4,250			2	200		
South Dakota	1	1	72	1	1				
Tennessee	13	12	430,815	10	81	3	91		
Texas	43	42	11,775,015	32	7	6	7	5	
Utah	2	2	390	2	3				
Vermont	1	1	2,000	1	1				
Virginia	17	17	77,955	13	62	4	8		
Washington	15	8	18,451	9	18	6	94		
West Virginia	12	12	59,667	12	17				
Wisconsin	5	5	6,550	5	9				
Total	624	543	16,111,210	474	1,174	137	5,653	13	744

* Includes embayments such as Chesapeake, San Francisco, and Galveston Bays.

8 Major Fish Kills

In 1975, 12 kills were reported in which the number of dead fish equaled or exceeded 100,000 each, accounting for 13.9 million fish (Table 4). Three of the kills were massive, reaching or exceeding the million mark, and totaling 12 million fish. Of these, two kills in Texas accounted for 11 million fish, with one kill in a Chambers County drainage canal reaching the 10 million mark, and one kill in Colorado accounted for 1 million fish. These three kills alone amounted to approximately 75 percent (12 million) of the 16.1 million fish killed by pollution in 1975.

Table 4—Major Kills—100,000 or Over—1975

Lake or stream	Near or in	State	Number of fish	Operation
Coyote Cr	Los Angeles	California	200,000	Pipeline transportation
St. Vrain R	Longmont	Colorado	1,000,000	Unknown
Mackinaw R	Anchor	Illinois	173,831	Manure drainage
Tarkio R	Tarkio	Missouri	105,834	Fertilizers
Kopp Cr	Auglaize Co	Ohio	112,966	Unknown
Tiger Cr	Creek Co	Oklahoma	205,420	Other operations
Grand Central Cr	Wind Gap	Pennsylvania	103,078	Truck transportation
Hatchie R	Bolivar	Tennessee	273,168	Metals
HL&P Old Disc. Ca	Chambers Co	Texas	10,000,000	Power
Cedar Bayou	Chambers Co	Texas	600,000	Unknown
Lake Ray Hubbard	Dallas Co	Texas	100,000	Unknown
Scott Bay	Harris Co	Texas	1,000,000	Unknown

Table 4

Lists the major fish kill incidents occurring in 1975 in which 100,000 or more fish were killed in each incident. Many more large kills may have gone unreported, or missed because they were not investigated immediately, and large kills may have been included in reports that did not state a number for fish killed.



Fish Killed, by Type of Water Body

In 1975, 92 percent (14.7 million) of the total fish reported killed died in rivers (Table 5), while 6 percent (1 million) died in coastal waters and only 2 percent (0.3 million) died in lakes.

Table 5—Fish Kill Summary by Type of Water Body, 1975					
Type of water body	Total reports	Reports specifying number of fish killed		Reports specifying number of fish killed and extent of area affected	
		Number of reports	Number of fish	Miles	Acres
River	474	427	14,731,563	1,174	
Lake	137	104	342,378		5,653
Coastal waters*	13	12	1,037,269	744	
Total	624	543	16,111,210	1,918	5,653

* Includes embayments such as Chesapeake, San Francisco, and Galveston Bays

Table 5

Summarizes reported fish kills by type of water body (river, lake, and coastal waters), and the extent of the area reportedly affected (by miles or acres). The mileage and acreage figures cannot always be accurately estimated, so care should be exercised in their use.



10 Fish Killed by Type of Water

In 1975, the number of fish reported killed in fresh water (any inland water upstream of tidal action) accounted for the largest number killed in the three types of water (Table 6), followed by estuary water (water of inlets, bays, or river mouths that are affected by tidal action). Almost 89 percent (14.3 million) of the total reported fish were killed in fresh water. Over 11 percent (1.7 million) were killed in estuary water. A relatively small number (29,000) were reported killed in salt water (water beyond the coastline).

While the number of fish killed in estuary water constitutes a minor percentage of the total, this is of special national concern, since estuaries serve as breeding and nursery grounds for many species of sport and commercial marine fish.

Table 6

Summarizes fish kills by type of water (fresh, salt, and estuary).

Type of water	Total re- ports	Reports specifying number of fish killed	
		Num- ber of re- ports	Number of fish
Fresh*	592	513	14 318 231
Salt**	10	8	29 328
Estuary***	22	22	1 763 651
Total	624	543	16 111 210

* Fresh water includes any inland water upstream of tidal action.
 ** Salt water means water beyond the coastline.
 *** Estuary means the water of inlets, bays, or river mouths that are affected by tidal action.

Fish Kills, By Month

As in the past, the greatest number of reports (73 percent) were submitted for the warm weather months (Table 7), from May through September. Warm weather often coincides with lower water levels during these months and compounds the effects of pollution. Also, since more people are in, or on, the water during the summer, kills are more apt to be observed and reported.

A total of 543 reports specified the number of fish killed by month. August ranked first in the number of reports (100) and fourth in number of fish killed (0.5 million). July ranked second in both number of reports (98) and fish killed (1.2 million). June ranked third in both the number of reports (77) and fish killed (0.6 million). May ranked fourth in the number of reports (67) and fifth in number of fish killed (0.1 million). September ranked fifth in number of reports (57), but it ranked first in number of fish killed (11.5 million).

Table 7

Summarizes fish kills by month.

Month	Total reports	Reports specifying number of fish killed	
		Number of reports	Number of fish
January	11	10	50,027
February	16	12	114,839
March	19	19	65,084
April	43	37	227,046
May	80	67	122,462
June	88	77	626,748
July	110	98	1,263,257
August	111	100	534,477
September	67	56	11,534,470
October	47	40	1,506,375
November	20	16	41,250
December	12	11	25,173
Total	624	543	16,111,210

Fish Kills, by Duration and Severity

Not all reports indicate duration of kill. In 1975, 55 percent (345 reports) indicated duration of kill with an average of 2.2 days (Table 8), which is a decrease of 1.4 days per average duration over that of 1974. In 1974, 63 percent (452 reports) indicated duration of kill with an average of 3.6 days. In 1975, the longest pollution incident (120 days) occurred in Georgia as a result of crop dusting with Endrin.

The severity of a fish kill is reported as "complete," "heavy," "moderate," or "light" (Table 8). Eighty "complete" fish kills were reported, averaging 4,930 fish killed per report. "Heavy" kills averaging 9,107 fish were reported on 166 occasions. "Moderate" kills were reported on 118 occasions, averaging 1,408 fish per kill. "Light" kills were reported on 131 occasions, averaging 314 fish per kill. The severity "not stated" was reported on 129 occasions averaging 6,083 fish killed. Table 8 also indicates the average duration of fish kills by severity.

Table 9 summarizes the reported number of pollution-caused fish kill incidents and pollution source operations within each Environmental Protection Agency Region. This table permits a comparison of the frequency of reported incidents in different sections of the United States due to different pollution sources.

Agricultural Operations

The total number of reported pollution-caused fish kill incidents from agricultural operations decreased from 145 in 1974 to 118 in 1975, a difference of 27 reported incidents (19 percent).

In 1975, manure-silage drainage in Region V (19 reports) was the most frequently reported individual source of pollution under agricultural operations for any of the ten regions. Pesticides in Region IV (14 reports) was the second most frequently reported individual source followed by pesticides in Region VI (13 reports).

In 1974, pesticides was responsible for 27 reported incidents in Region IV, 33 reported incidents in Region VI, and 7 reported incidents in Region IX, making it the leading agricultural source of reported pollution-caused fish kill incidents for all regions combined in that year.

In 1974, fertilizers were reported as the pollution source in 8 fish kill incidents from Regions II, IV, V, VI, VIII, and X, representing 6 percent of the agricultural operations total. In 1975 fertilizers caused only 3 percent of the incidents.

Table 8—Fish Kill Summary by Duration and Severity of Kill, 1975

Severity of kill	Number of reports	Average kill**	Duration of Kill		Agricultural		Industrial		Municipal		Transportation		Other Operations		Unknown	
			No	Average (days)*	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent	No	Percent
Complete kill	80	4.930	155	1.40	27	22	13	10	6	6	12	25	11	14	11	6
Heavy kill	166	9.107	119	3.09	41	34	33	27	27	30	15	31	18	23	32	18
Moderate kill	118	1.408	80	2.19	23	19	22	18	24	26	3	6	12	26	26	15
Light kill	131	3.14	81	1.46	12	10	33	27	14	15	11	23	14	17	47	27
Not stated	129	6.083	10	1.30	15	12	21	17	19	21	6	12	14	17	53	31
Total	624	3.879	345	2.18	118	100	122	100	90	100	47	100	78	100	169	100

* Includes all fish killed as reported plus an allowance computed for reports which did not indicate the number of fish that died.

** Derived after excluding 25 reports of 100,000 kills or more.

Table 8

Summarizes the reported duration and estimated severity of fish kills, their average size, and the number and percent of reports for the

different pollution sources. These figures cannot always be accurately estimated, so care should be exercised in their use.

Table 9—Number of Fish Kill Reports by Source of Pollution Within EPA Regions, 1975

Source of pollution	EPA Regions											Total
	I	II	III	IV	V	VI	VII	VIII	IX	X		
Agricultural												
Pesticides	3	1	4	14	6	13	6	2	12	2	63	
Fertilizers			1	1	7	1	6				16	
Manure/silage drainage			5	3	19	1	10			1	39	
Subtotal	3	1	10	18	32	15	22	2	12	3	118	
Industrial												
Mining			3	5	2	1	3	1	5		20	
Food products		6	1		9	2	2				20	
Paper products	2			4	2	2	1				11	
Chemicals	2	1	6	7	7	3	2	1			29	
Petroleum			6	1	7	5	2		1	1	23	
Metals				1	3	1				1	6	
Combinations												
Other	1		1	4	4	2				1	13	
Subtotal	5	7	17	22	34	16	10	2	6	3	122	
Municipal												
Sewerage systems	5	3	8	12	21	8	8	1	4		70	
Refuse disposal			2								2	
Water systems		1	1		1		1	1	1		6	
Swimming pool		1	1						1		3	
Power			2		2	1	4				9	
Subtotal	5	5	14	12	24	9	13	2	6		90	
Transportation												
Rail			1		1	3					5	
Truck		1	10	6	8	1	2	1	1		30	
Barge or Boat												
Pipeline		1	2		1	1	5		2		12	
Subtotal		2	13	6	10	5	7	1	3		47	
Other Operations	1	5	18	8	19	11	7	1	4	4	78	
Unknown	6	1	4	31	29	52	9	3	24	10	169	
Total	20	21	76	97	148	108	68	11	55	20	624	

REGION I	REGION V	REGION IX
Connecticut	Illinois	Arizona
Maine	Indiana	California
Massachusetts	Michigan	Hawaii
New Hampshire	Minnesota	Nevada
Rhode Island	Ohio	
Vermont	Wisconsin	REGION X
		Alaska
REGION II	REGION VI	Idaho
New Jersey	Arkansas	Oregon
New York	Louisiana	Washington
	New Mexico	
REGION III	Oklahoma	
Delaware	Texas	
District of Columbia		REGION VII
		Iowa
Maryland		Kansas
Pennsylvania		Missouri
Virginia		Nebraska
West Virginia		
REGION IV	REGION VIII	
Alabama	Colorado	
Florida	Montana	
Georgia	North Dakota	
Kentucky	South Dakota	
Mississippi	Utah	
North Carolina	Wyoming	
South Carolina		
Tennessee		

REGION I
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

REGION II
New Jersey
New York

REGION III
Delaware
District of Columbia
Maryland
Pennsylvania
Virginia
West Virginia

REGION IV
Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee

REGION V
Illinois
Indiana
Michigan
Minnesota
Ohio
Wisconsin

REGION VI
Arkansas
Louisiana
New Mexico
Oklahoma
Texas

REGION VII
Iowa
Kansas
Missouri
Nebraska

REGION VIII
Colorado
Montana
North Dakota
South Dakota
Utah
Wyoming

REGION IX
Arizona
California
Hawaii
Nevada

REGION X
Alaska
Idaho
Oregon
Washington

Table 9

Summarizes the number of reported pollution-caused fish kill incidents by individual source of pollution for each EPA region. Region VIII again reported the

smallest number of fish kill incidents (11 reports) while Region V (148 reports) led in the number of reported incidents.

Municipal Operations

In 1974, sewerage systems in all regions were the most frequently reported individual source of pollution under municipal operations, totaling 142 reported fish kill incidents. Regions II, IV, and V accounted for 92 reported incidents, or 54 percent of all pollution-caused fish kill incidents resulting from municipal operations.

In 1975, sewerage systems were again the most frequently reported pollution source under municipal operations, totaling 70 reported pollution-caused fish kill incidents. Regions III, IV, V, VI, and VII accounted for 57 reported incidents, or 81 percent of all reported incidents.

The 70 incidents in 1975, compared to the 1974 total of 142 incidents, reflect a more than 50 percent decrease. Significant changes occurred in Regions II and V, where the number of reported incidents decreased from 60 incidents in 1974 to 24 incidents in 1975. The largest part of this change (19 reports) occurred in Region V.

Industrial Operations

In 1975, industrial operations accounted for more pollution-caused fish kill incidents (122) than any other pollution source operation, but this shows a decrease of 46 reported incidents from the 168 incidents reported in 1974, a more than 27 percent change.

Food products in Region V (9 reports) was the most frequently reported individual source of pollution under industrial operations for any given region, and chemicals (29 reports) was the most frequently reported individual source of pollution for all regions combined.

In 1974, food products in Region V and petroleum in Region IV (11 reports each) were the most frequently reported individual sources of pollution under industrial operations for any given region.

Transportation Operations

In 1975, transportation operations (47 reports for all regions) had the smallest number of reported fish kill incidents of any major pollution source operation. The 10 reported incidents involving trucks from Region III represented the largest number of reports in any one region for any single source of pollution within the transportation operations category, or 21 percent of the total reports. Barge or boat operations, an individual source of pollution, accounted for 64 percent of the total incidents for all regions under transportation operations.

In 1974, transportation operations (40 reports for all regions) also had the smallest number of reported fish kill incidents of any major pollution source operation. Truck operations, under this category, accounted for 26 reported incidents, or 65 percent of the total.

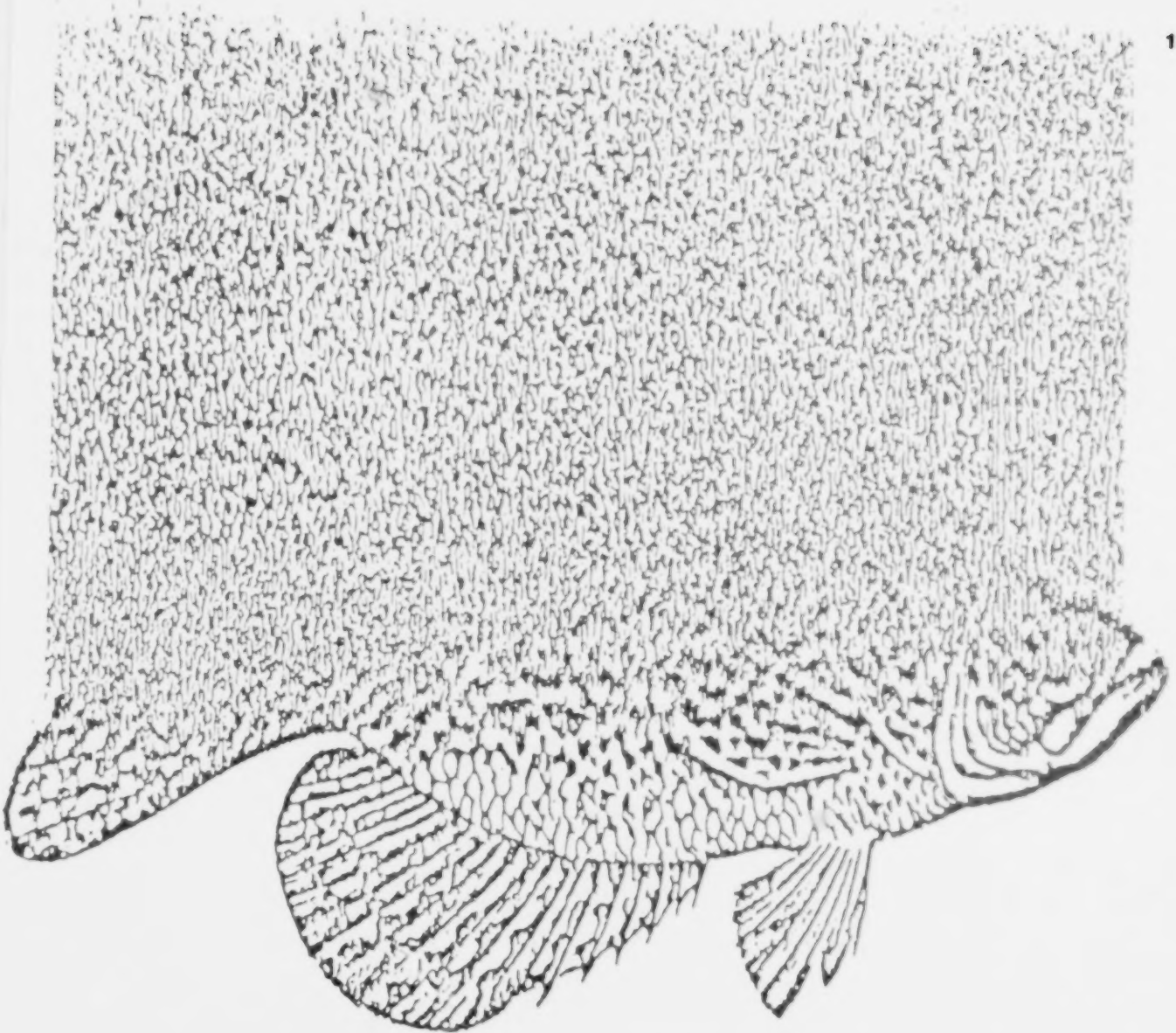
Construction or Other Operations

Other operations are a general category for those identifiable sources of pollution which do not fall under the other four categories.

In 1975, of the 78 reported fish kill incidents under the "Other Operations" category, three regions accounted for most of the incidents. They were Region V with 19 reports or 24 percent, Region III with 18 reports or 23 percent and Region VI with 11 reports or 14 percent. In 1974, of the 74 incidents reported, four regions accounted for most of the reported incidents. They were Region V with 18 reports or 24 percent, Region IX with 14 reports or 18 percent, Region III with 12 reports or 16 percent and Region II with 10 reports or 13 percent.

In 1975, a total of 78 fish kill incidents were reported.

There was an increase in the total number of reported incidents (4 reports) for other operations from 1974 to 1975. However, the number of individual reported incidents ranged from a decrease of 10 reports in Region IX to an increase of 10 reports in Region VI.



Summary of Reported Fish Kills, Nationally and by State

16

This section of the report summarizes fish kills reported in 1975 on a national and State-by-State basis, using a computerized map plotting program from the EPA STORage and RETrieval (STORET) system. STORET is the agency's Water Quality Information System. The program plots each State separately and pinpoints each reported fish kill within the county in which it occurred. Each map includes a set of symbols denoting the size of an individual kill. Where more than one fish kill has been reported in a county, note that a multiple of symbols appear within the county as overlays.

Figure 2 is a national chart which indicates by percentages the total reported fish killed by the type of operation which may have been responsible for the fish kill. This chart can also be used to compare nation-wide causes versus causes within any reporting State. States which did not submit fish kill reports in 1975 are not included.

In 1975, the largest number of reported fish kills were classified as cause unknown (25 percent). The fact that these causes are unknown may be due to factors such as the time of day, the season of the year, the physical isolation of an area, the lack of laboratory testing facilities, or possible man power shortages.

Industrial operations ranked second (20 percent) in the number of reported fish kills. This category includes chemicals (5 percent), petroleum (4 percent), mining (3 percent), food products (3 percent), paper products (2 percent), other (2 percent), and metals (1 percent).

Agricultural operations ranked third (19 percent). This category includes pesticides (10 percent), manure-silage drainage (6 percent), and fertilizers (3 percent).

Municipal operations ranked fourth (15 percent). This category includes sewerage systems (12 percent), power (2 percent), refuse disposal (0.5 percent), water systems (0.5 percent), and swimming pool (0.5 percent).

Other operations ranked fifth (12 percent).

Transportation operations ranked sixth, and last, (8.5) percent. This category includes truck (6 percent), barge and boat/pipeline (2 percent), and rail (0.5 percent).

Figures 3 through 47 show the reported fish kills, by size and percentages of causes, for each of the States that reported kills in 1975. The State outlines for these figures are provided by the U.S. Department of Transportation's State County Data Bank.

Figure 2

Percentage of Fish Kills Reported in
United States, by Cause—1975

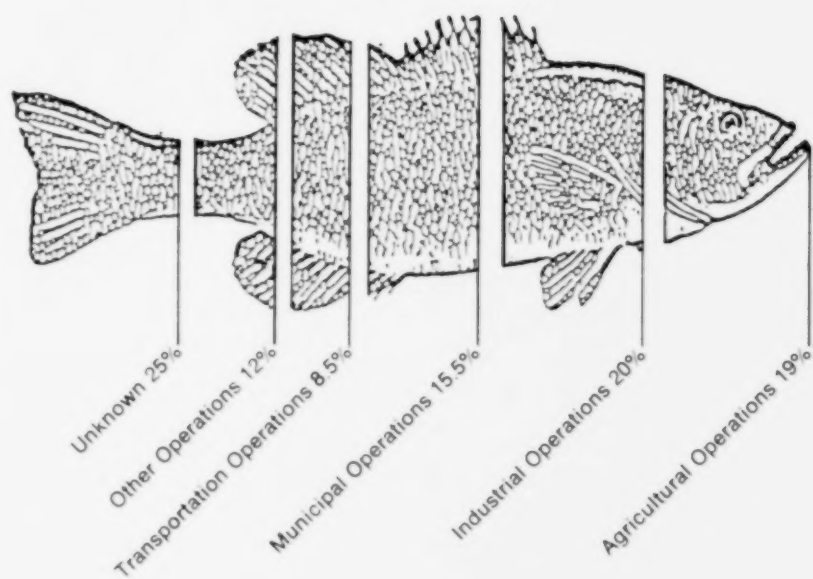


Figure 3

State of Alabama—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

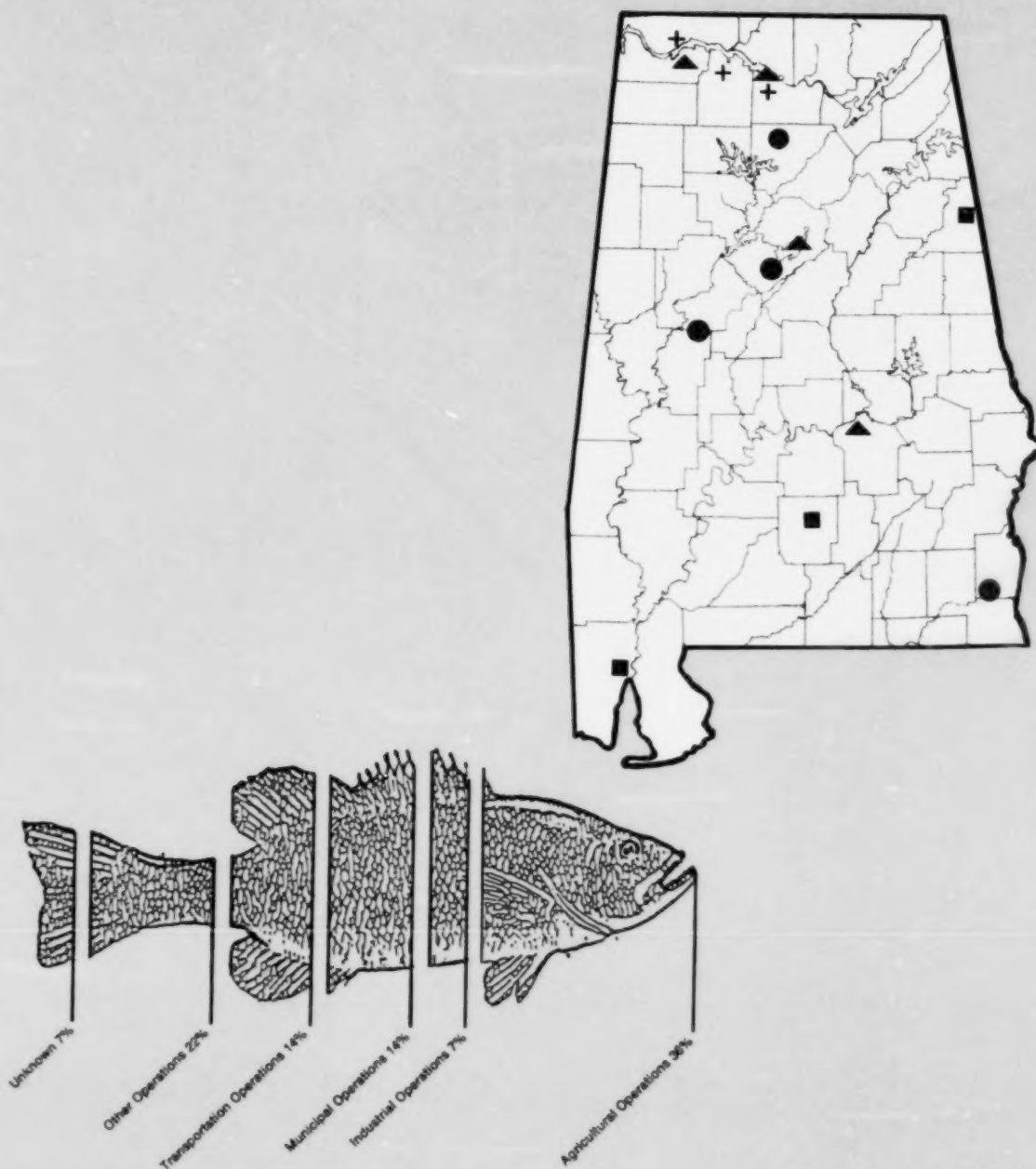


Figure 4

State of Arkansas—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- ✚ 10 000-100 000
- ✕ 100 000-1 000 000
- ◆ over 1 000 000

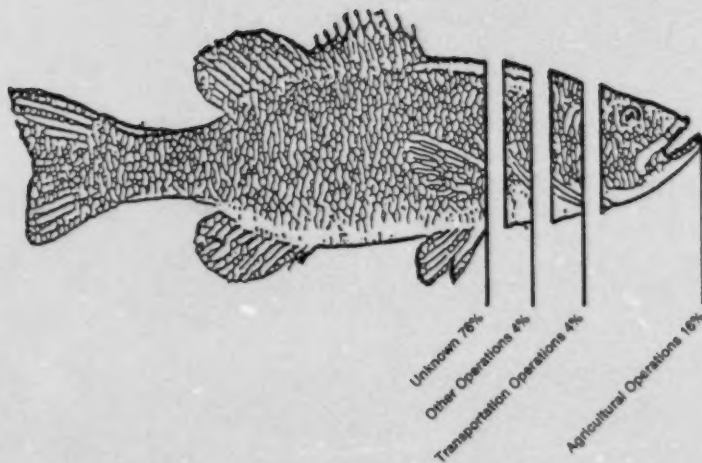
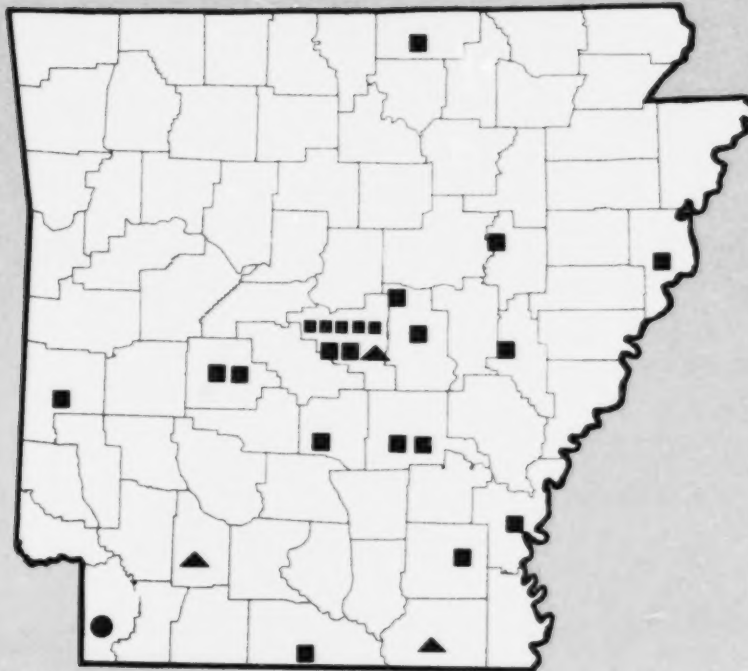


Figure 5

State of California—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000



Figure 6

State of Colorado—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

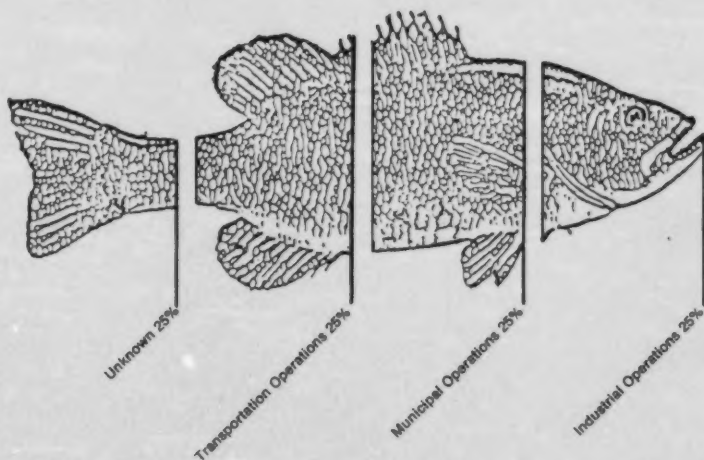
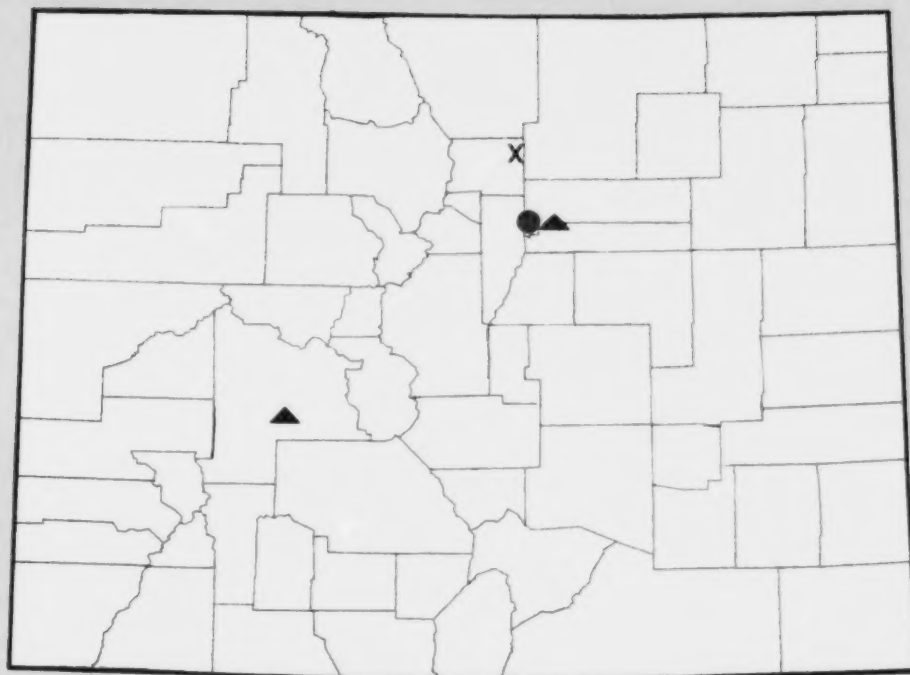


Figure 7

State of Connecticut—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

22

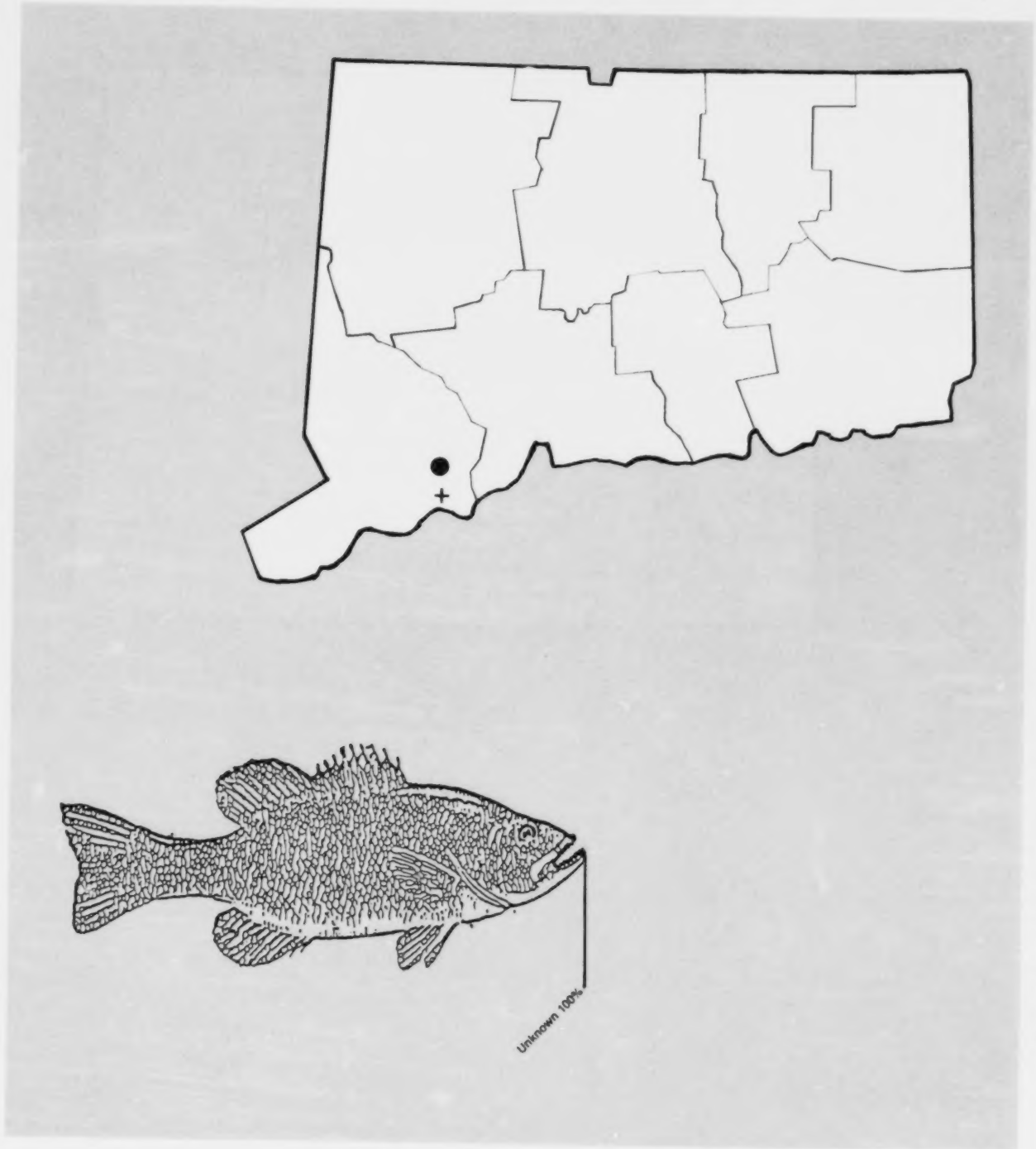


Figure 8

State of Delaware—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

23

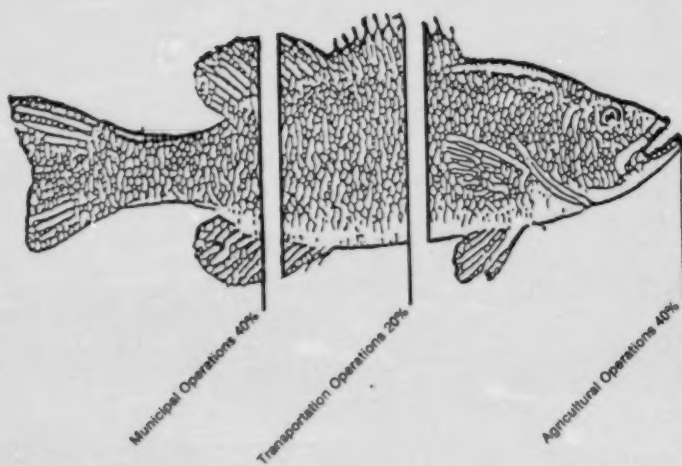


Figure 9

State of Florida—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1000 000
◆	over 1000 000

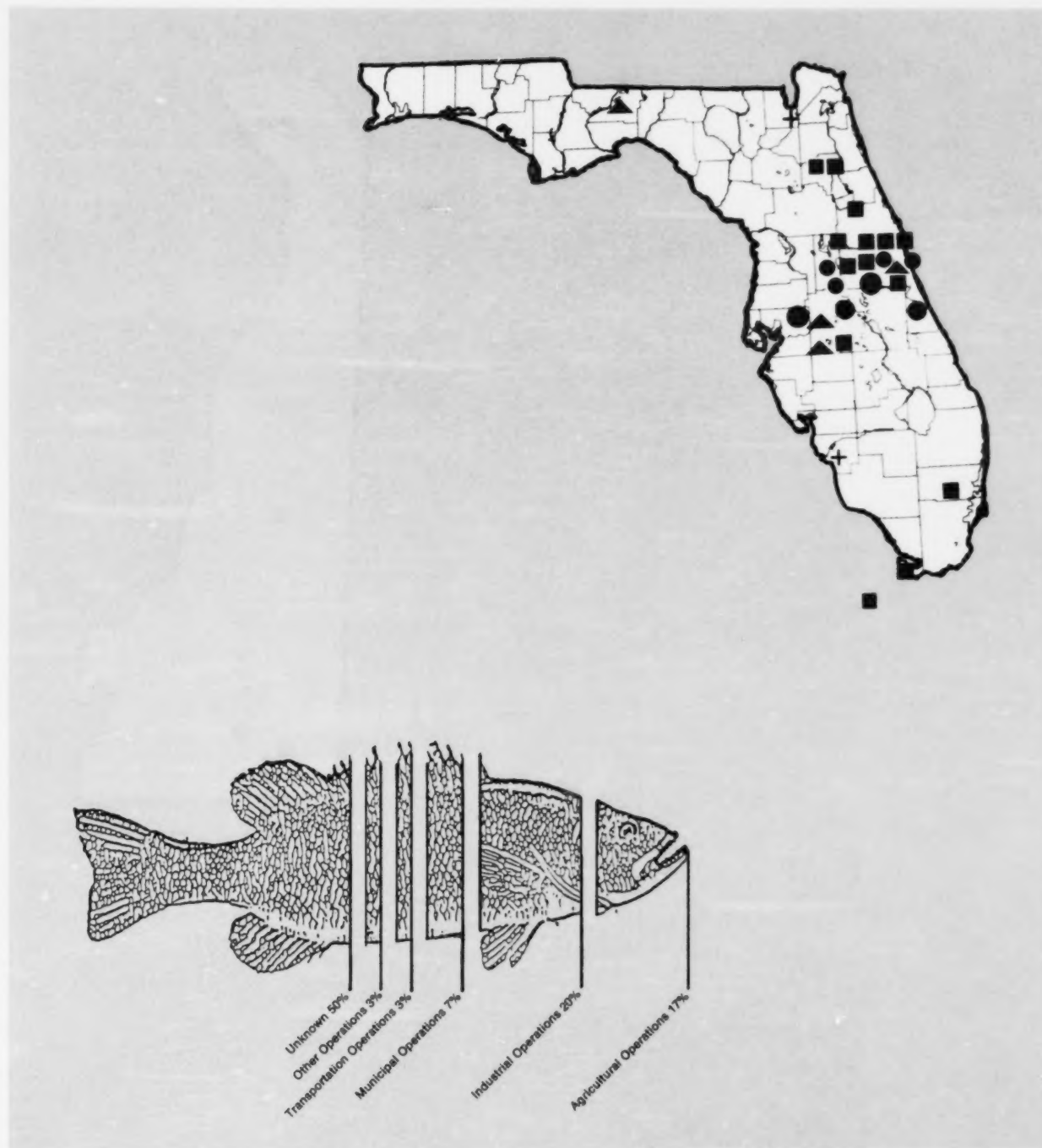


Figure 10

State of Georgia—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1000 000
- ◆ over 1000 000

25

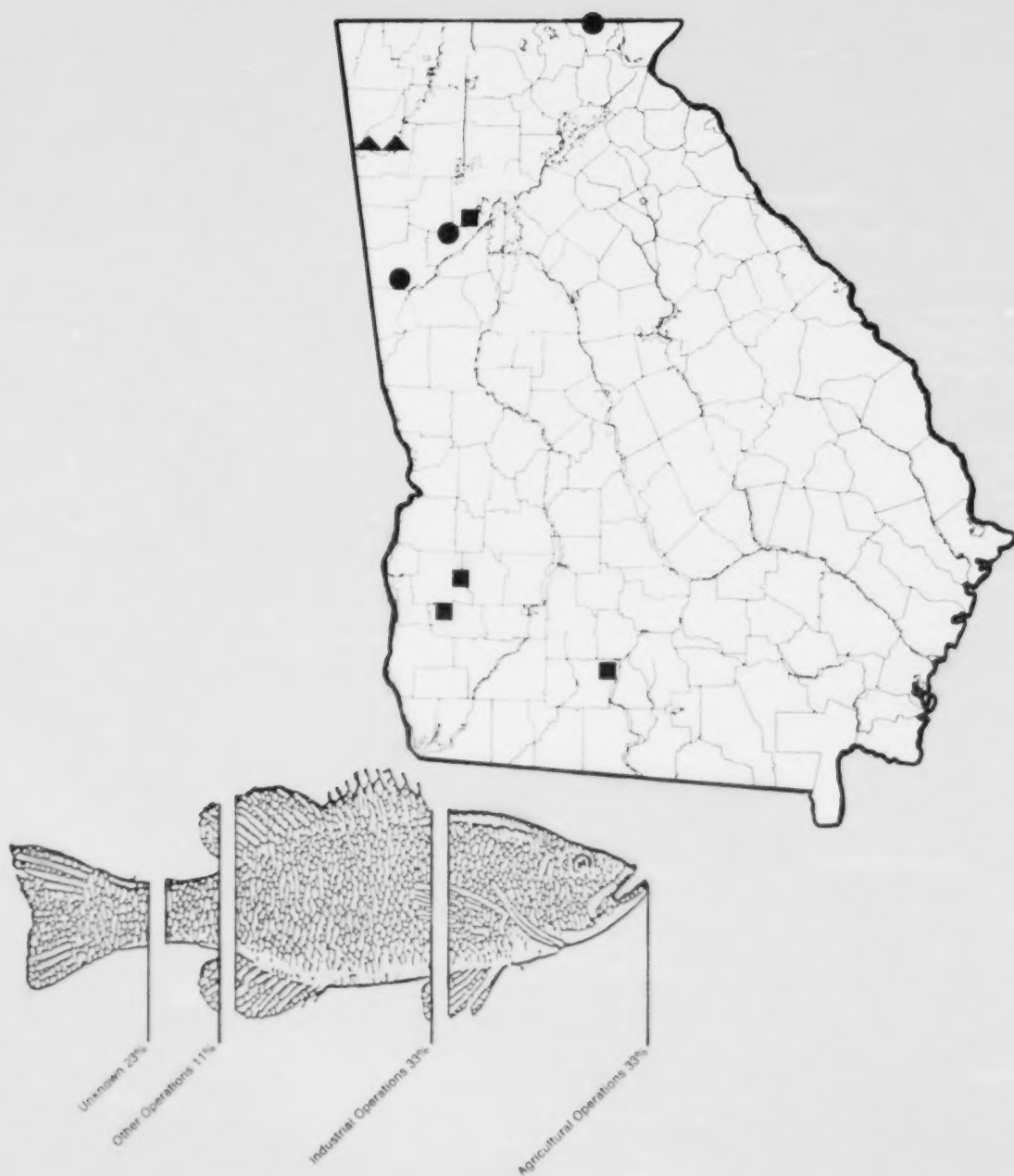


Figure 11

State of Hawaii—Since the Department of Transportation State County Data Bank does not include a state outline for Hawaii, a map showing reported fish kills by size has not been included in this report.

The EPA's STORET computer system is investigating the expansion of the Department of Transportation's data bank to eventually include Hawaii.

The chart shows that industrial operations accounted for 100 percent of the fish kills reported for Hawaii in 1975.

26

Drainage Canal—Honolulu, 1,000 Fish Reported Killed



Figure 12

State of Idaho—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

27

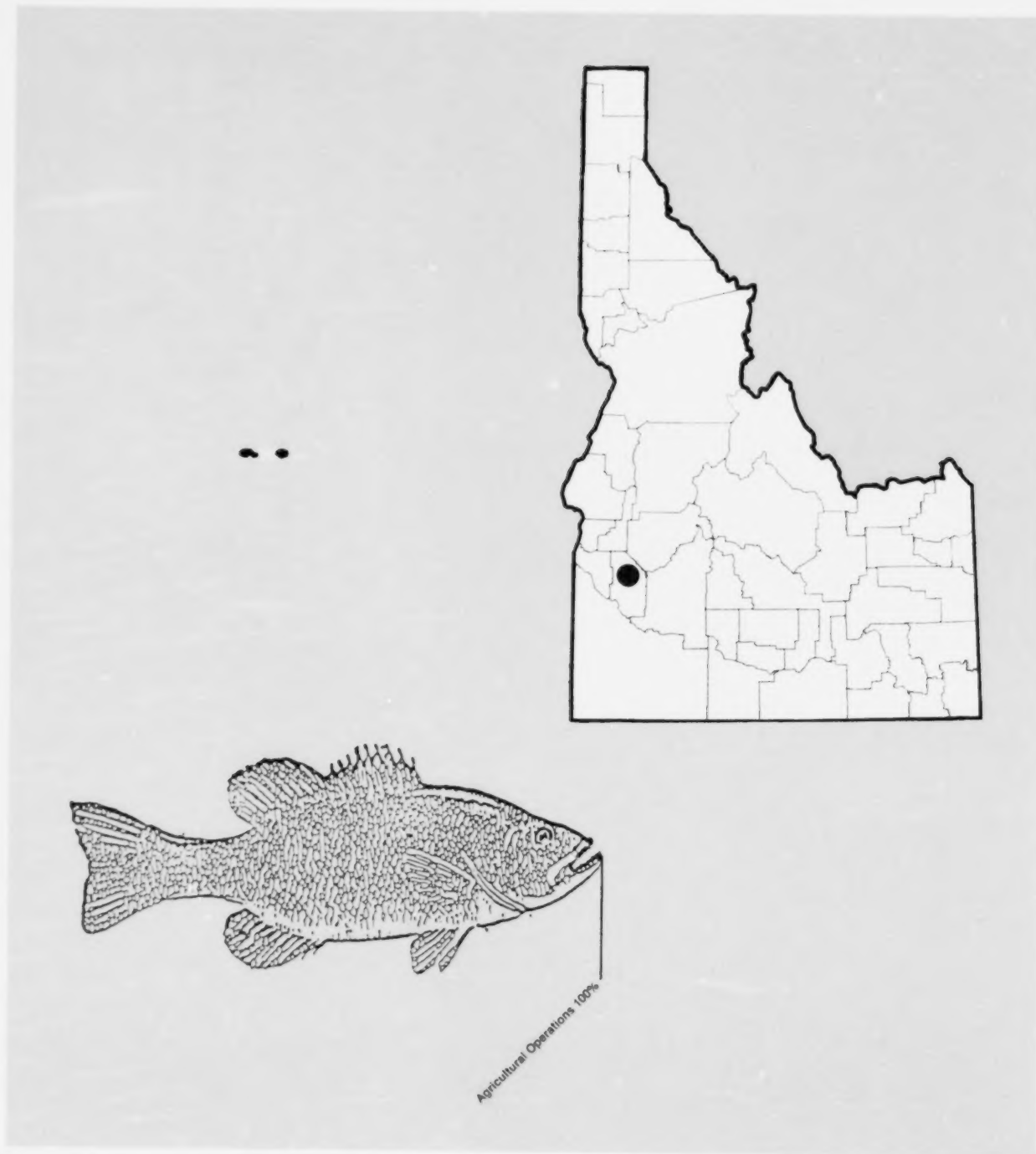


Figure 13

State of Indiana—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
×	100 000-1 000 000
◆	over 1 000 000

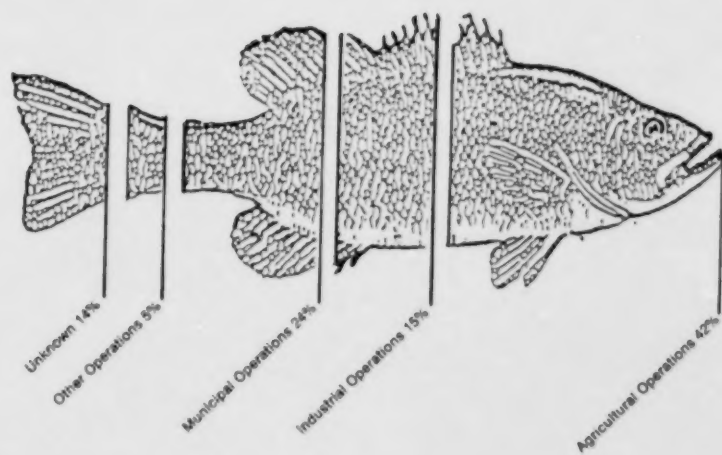


Figure 14

State of Iowa—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

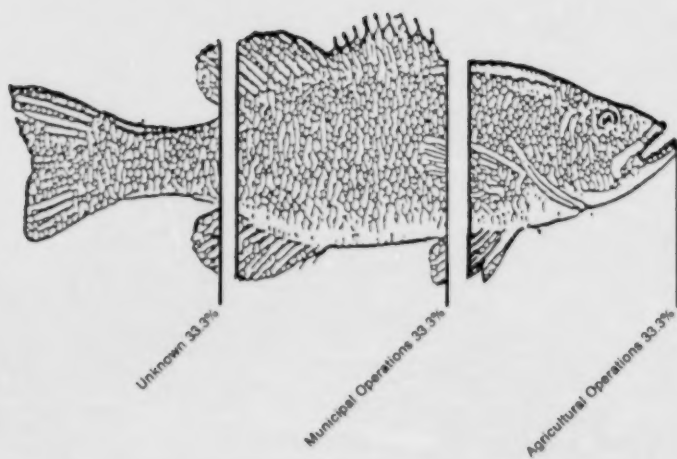
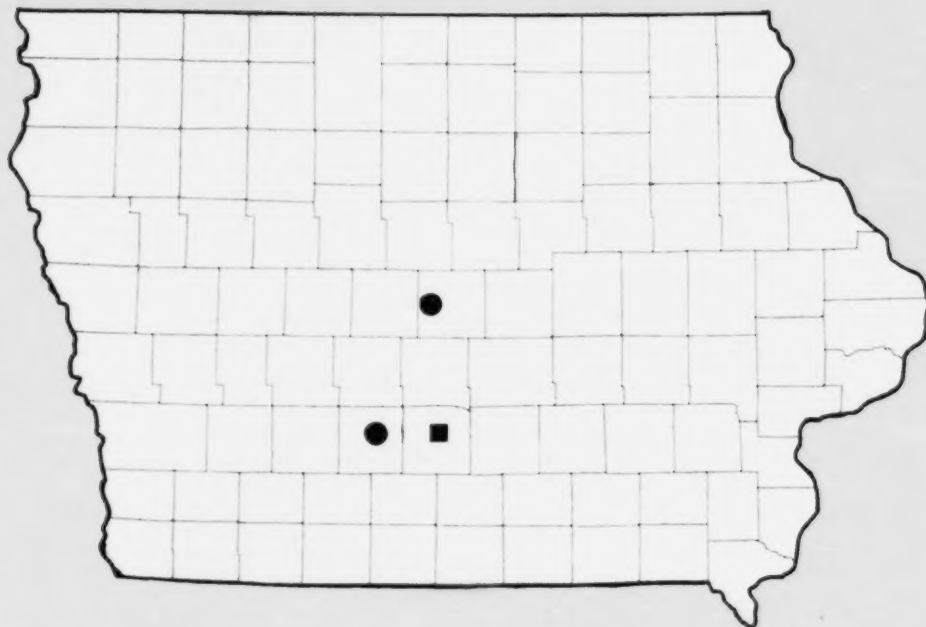


Figure 15

State of Illinois—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

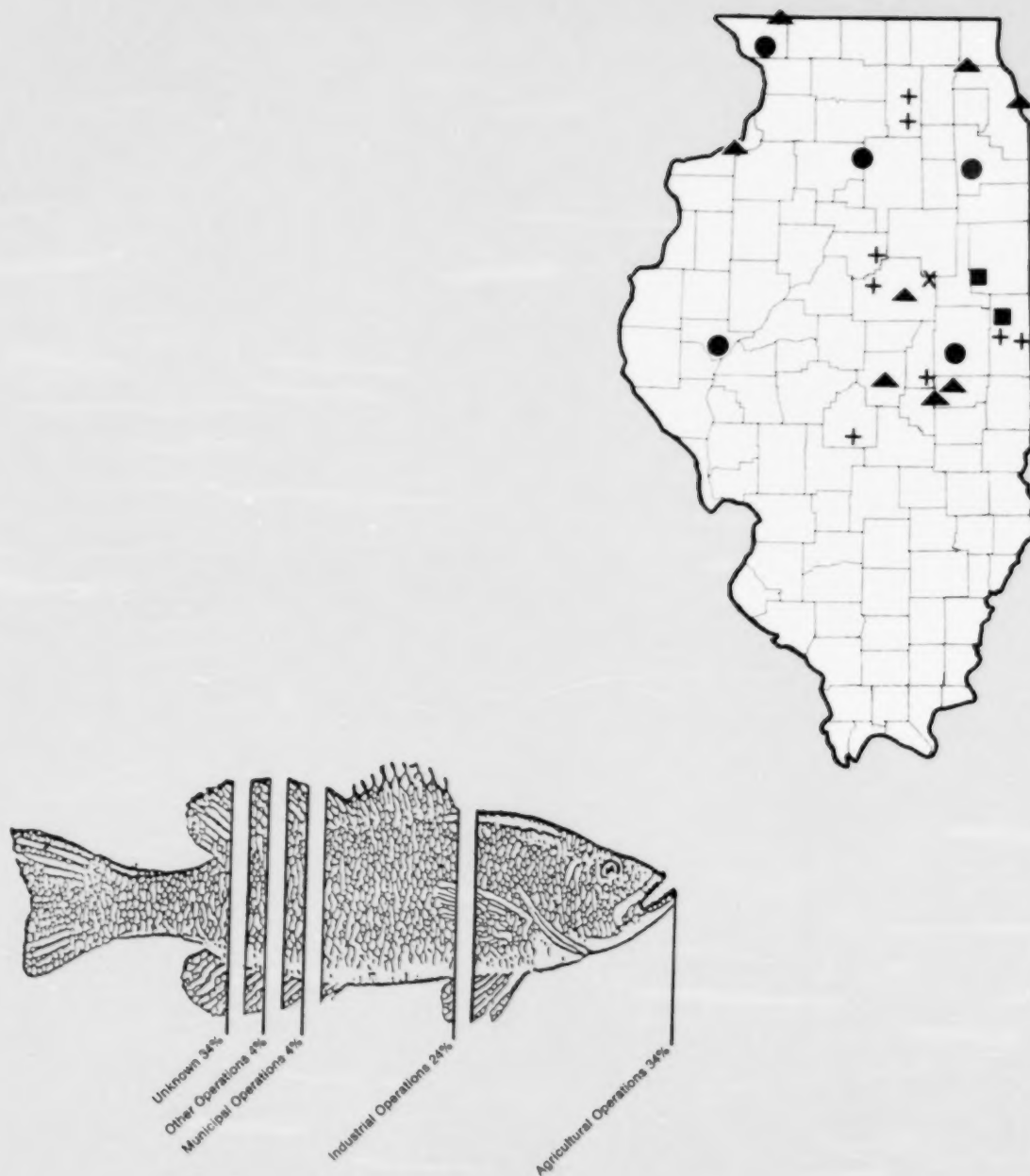


Figure 16

State of Kansas—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- × 100 000-1000 000
- ◆ over 1000 000

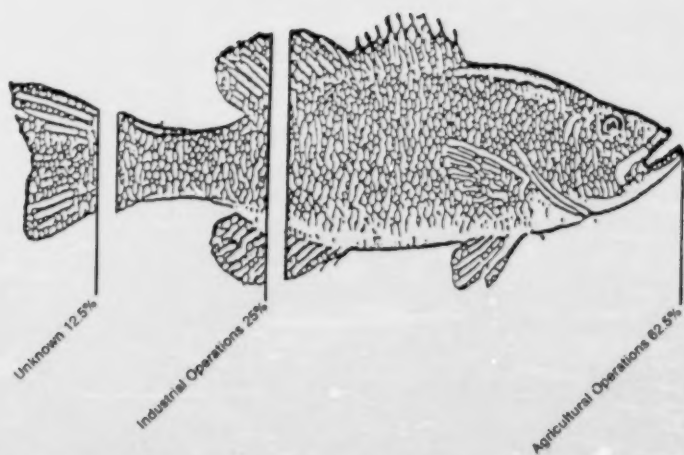
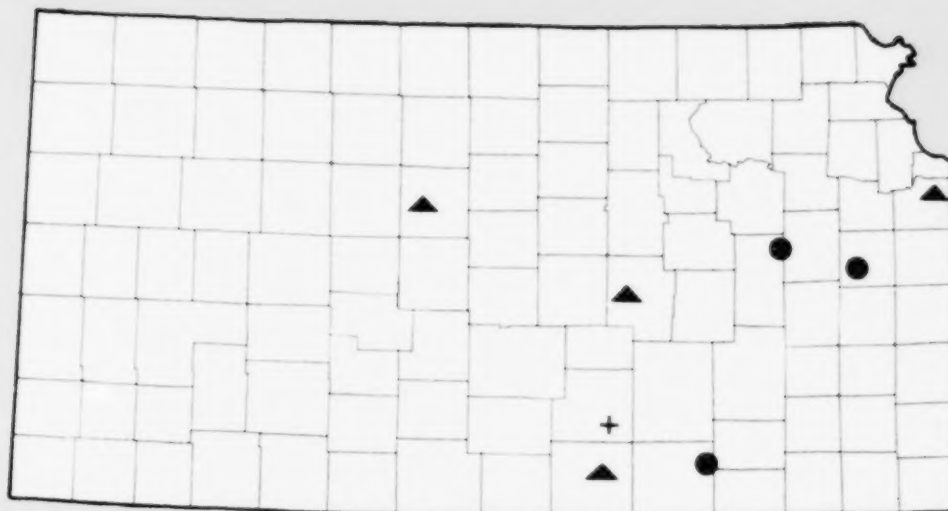


Figure 17

State of Kentucky—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- × 100 000-1000 000
- ◆ over 1000 000

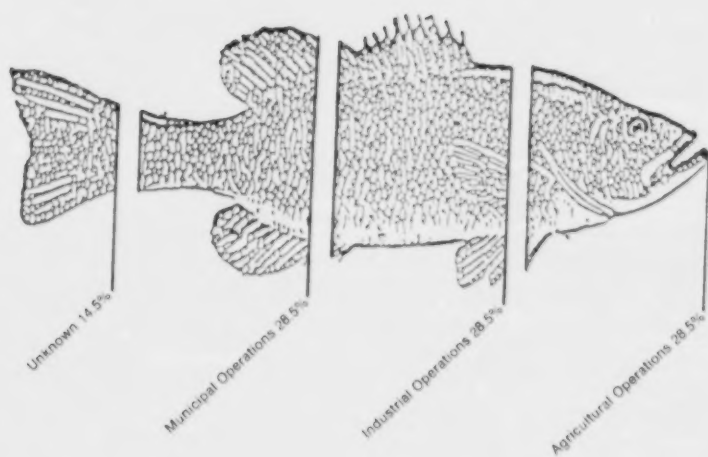
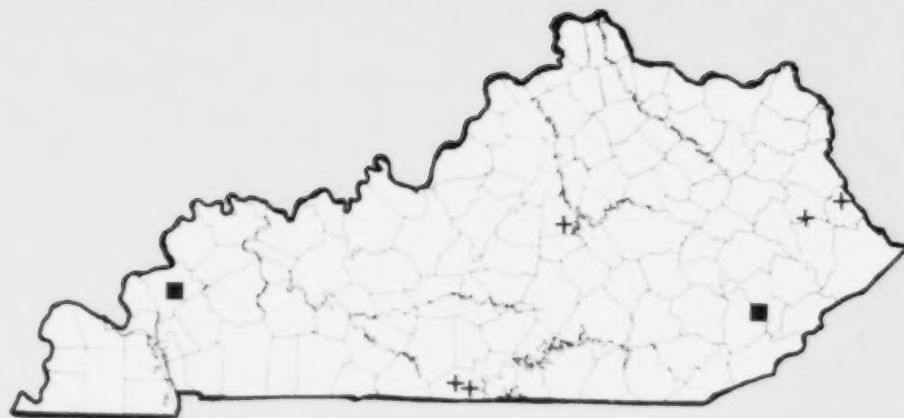


Figure 18

State of Louisiana—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

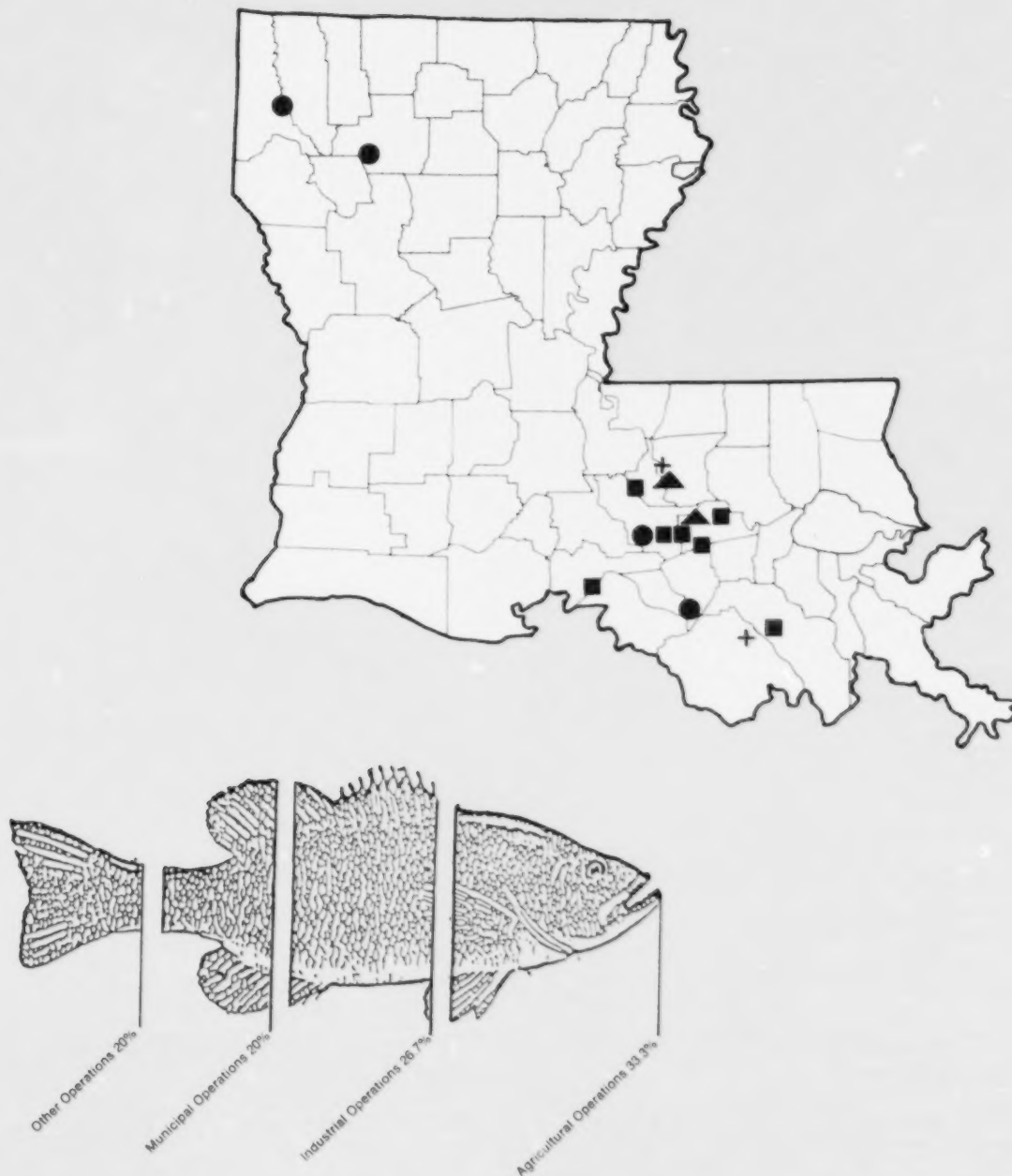


Figure 19

State of Maine—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

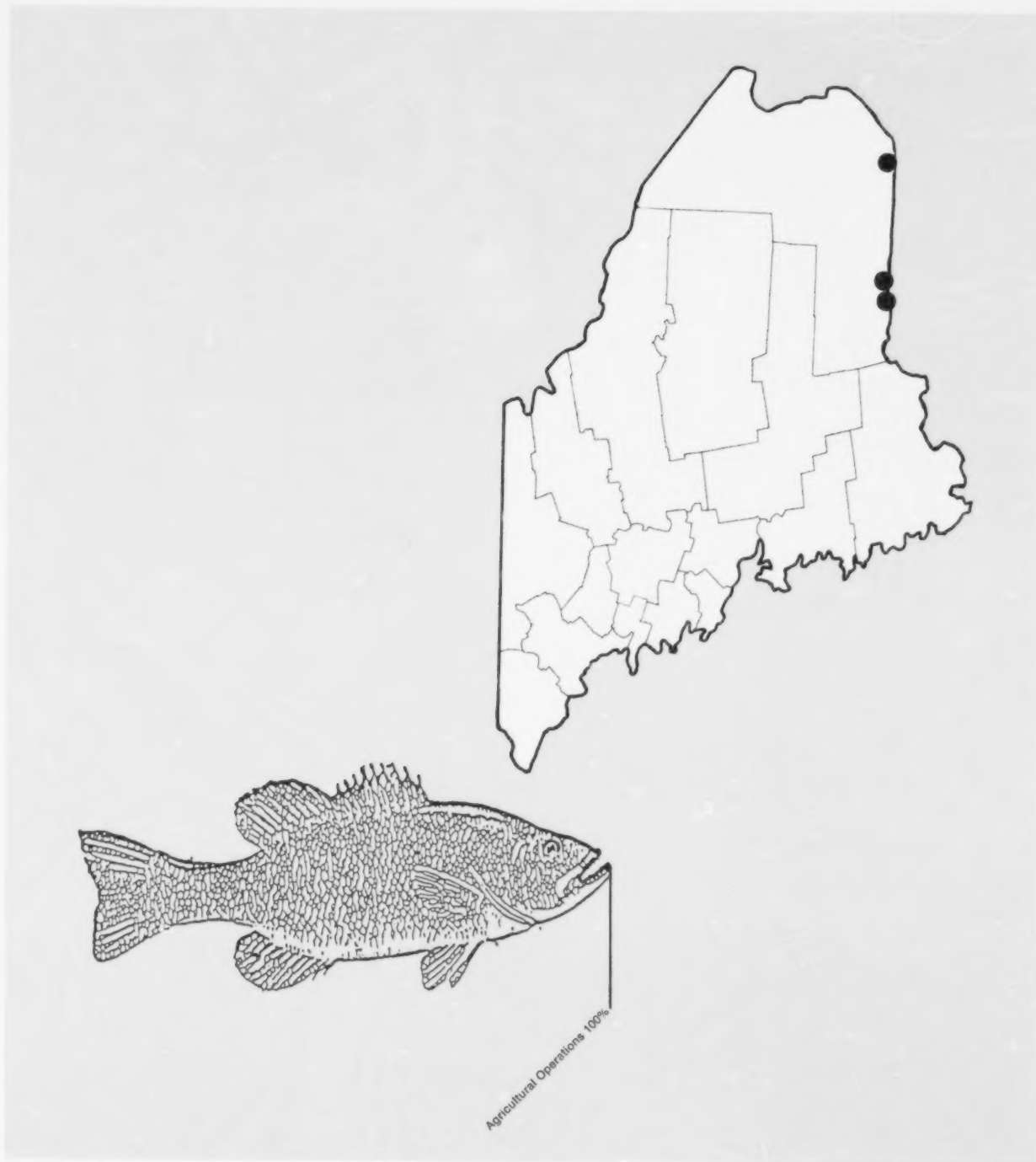


Figure 20

State of Maryland—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1000 000
- ◆ over 1000 000

35

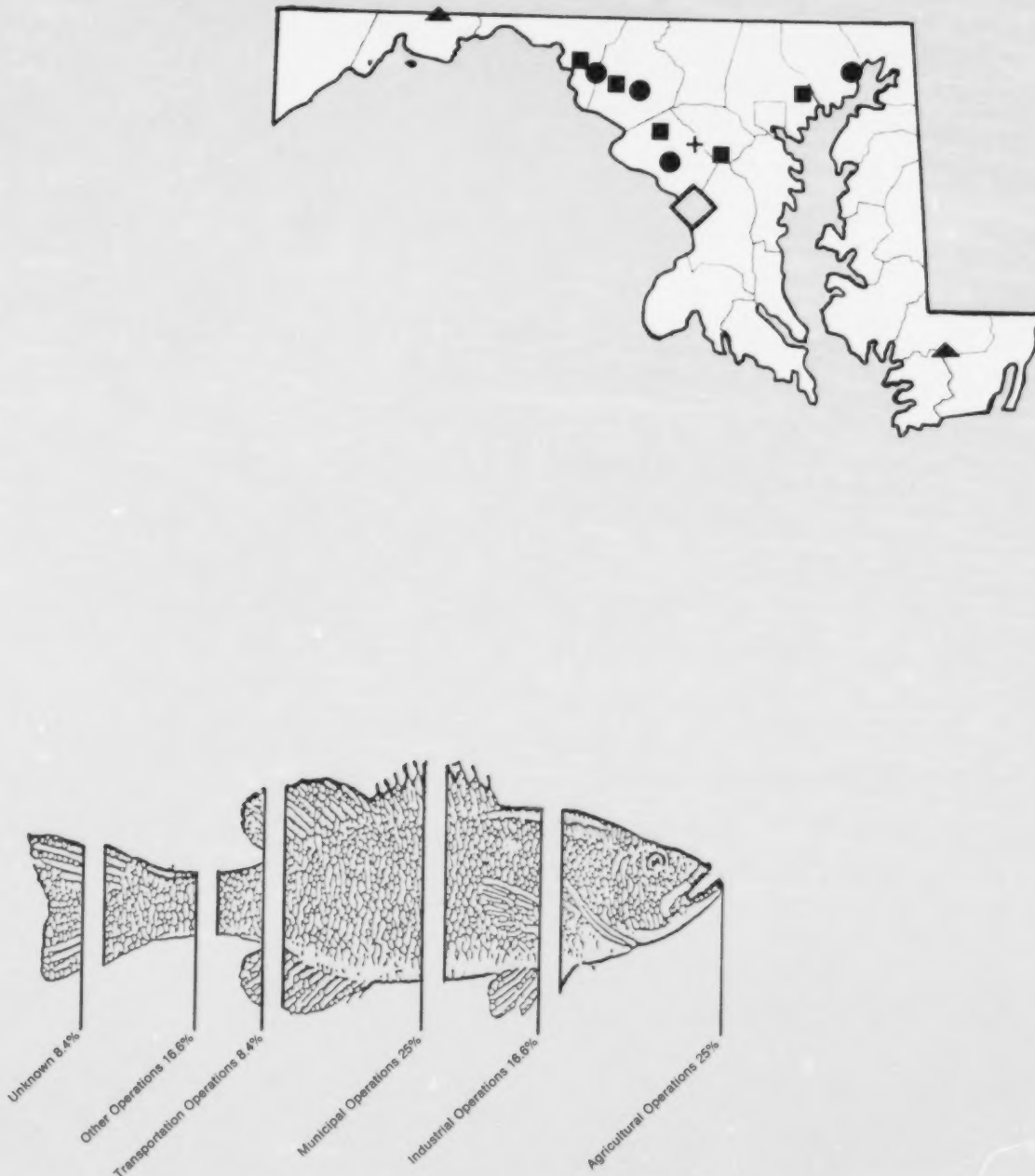


Figure 21

State of Massachusetts—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

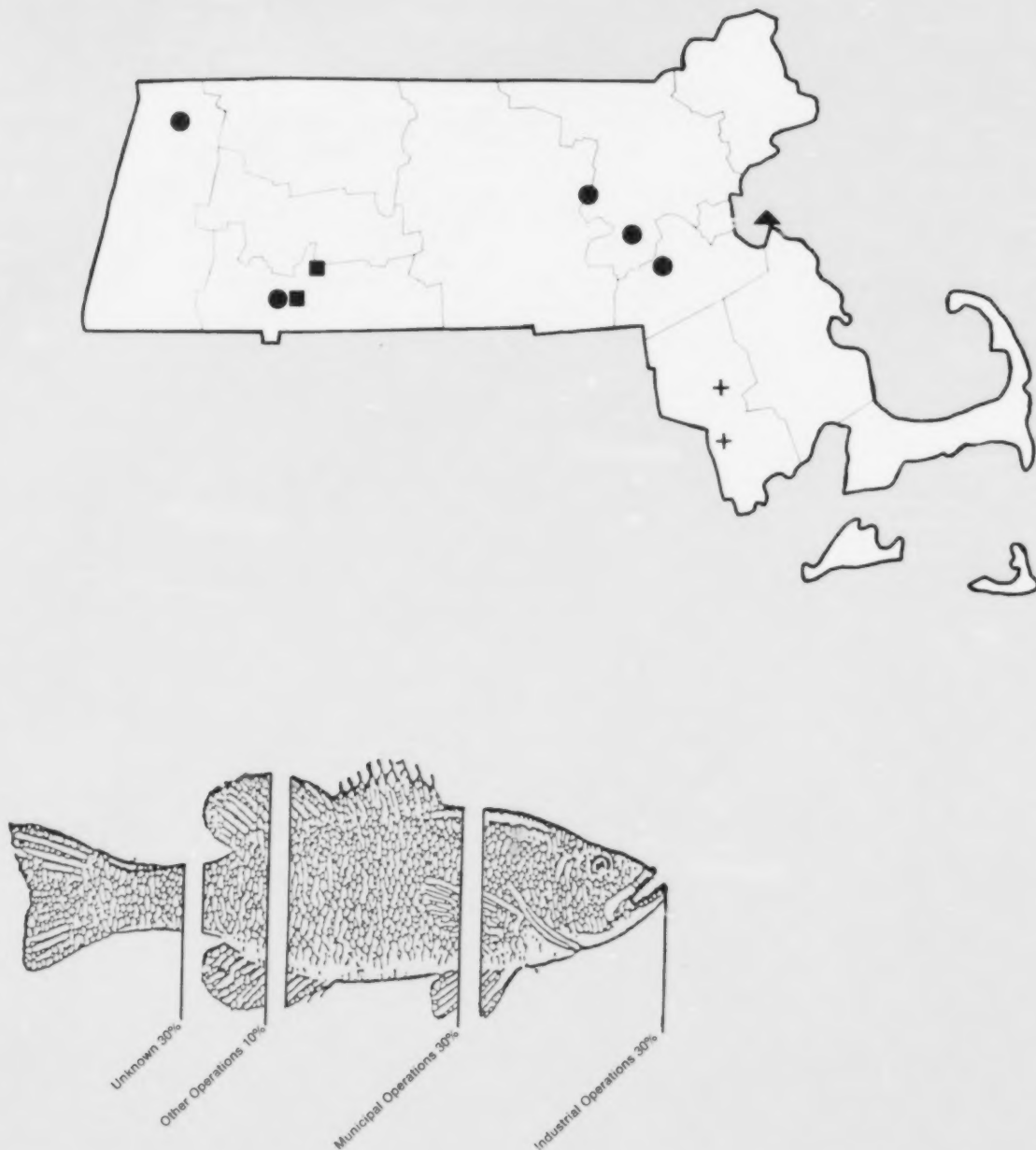


Figure 22

State of Michigan—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1000 000
- ◆ over 1000 000



Figure 23

State of Minnesota—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- × 100 000-1 000 000
- ◆ over 1 000 000

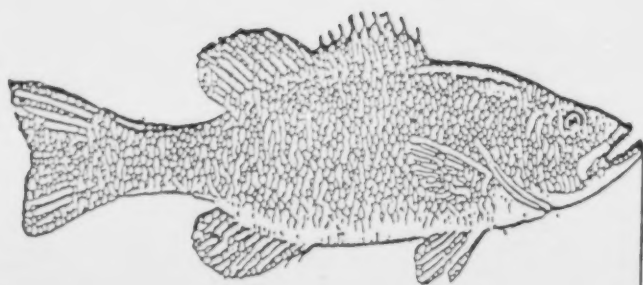


Figure 24

State of Mississippi—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000



Industrial Operations 100%

Figure 25

State of Missouri—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- ✚ 10 000-100 000
- ✕ 100 000-1 000 000
- ◆ over 1 000 000

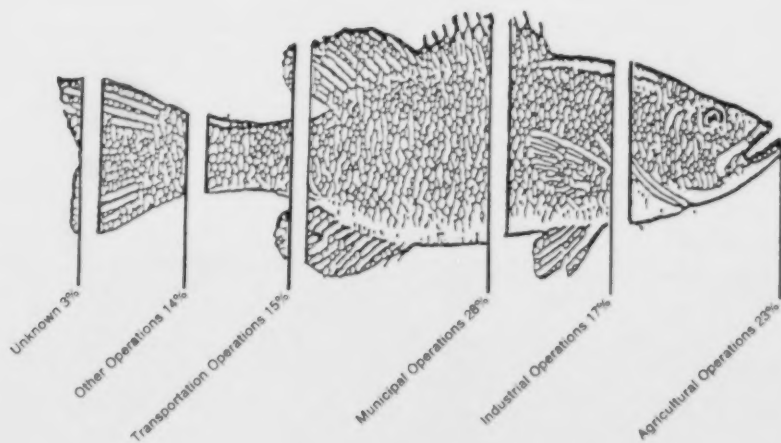
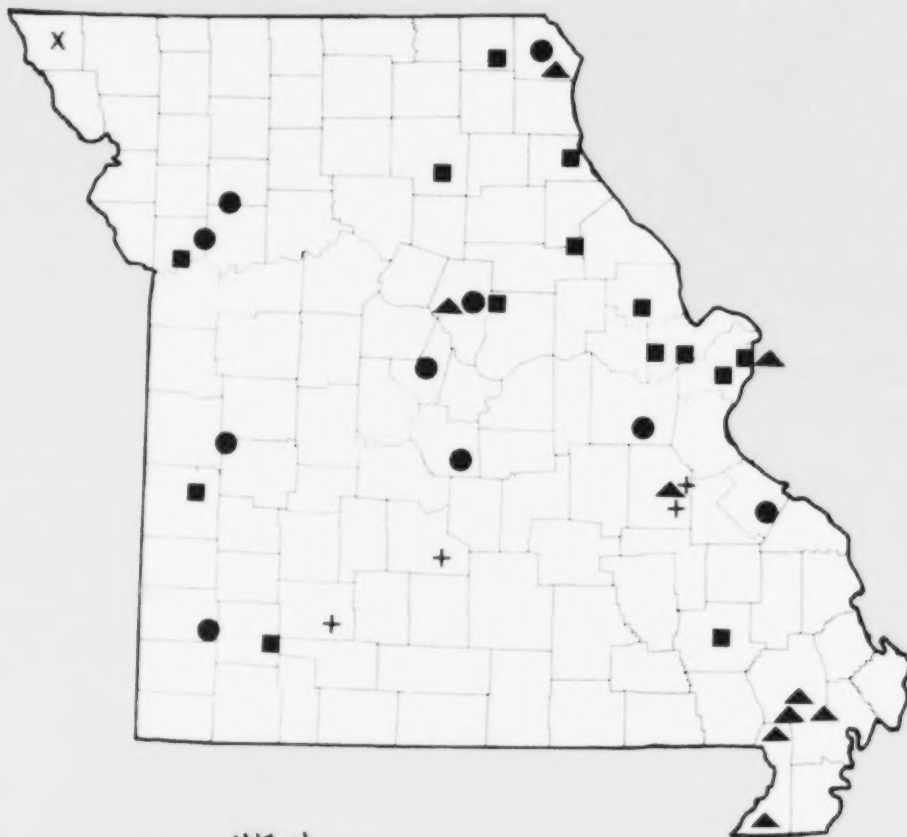


Figure 26

State of Montana—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1000 000
◆	over 1000 000

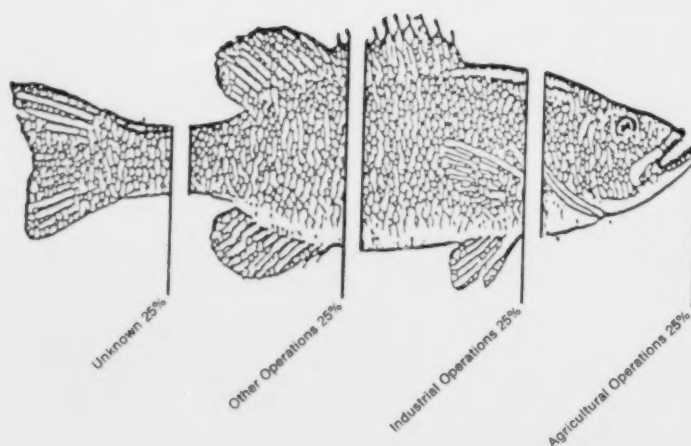
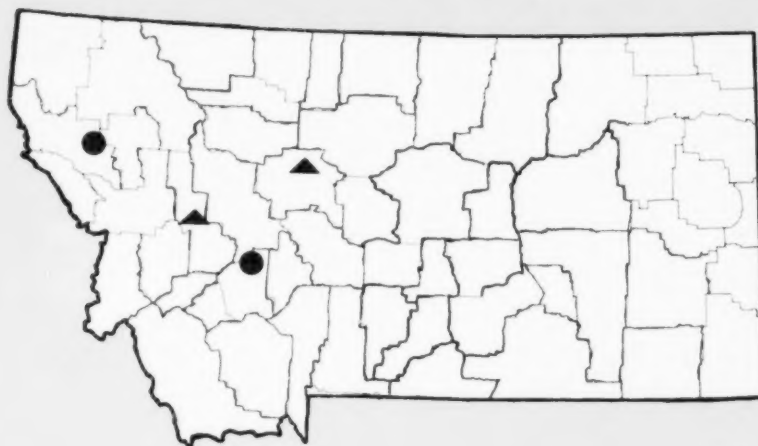


Figure 27

State of Nebraska—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10000
+	10000-100000
x	100000-1000000
◆	over 1000000

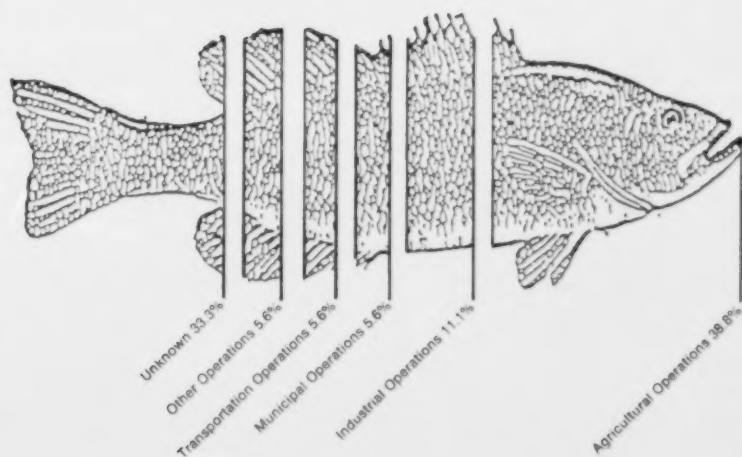
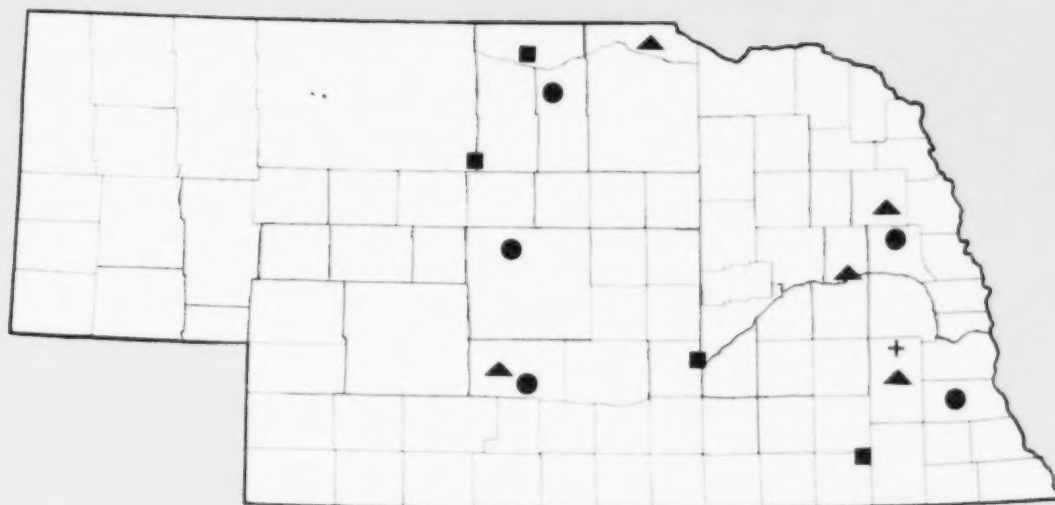


Figure 28

State of Nevada—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000



Figure 29

State of New Hampshire--Reported
Fish Kills, by Size and Percentages
of Causes--1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

44

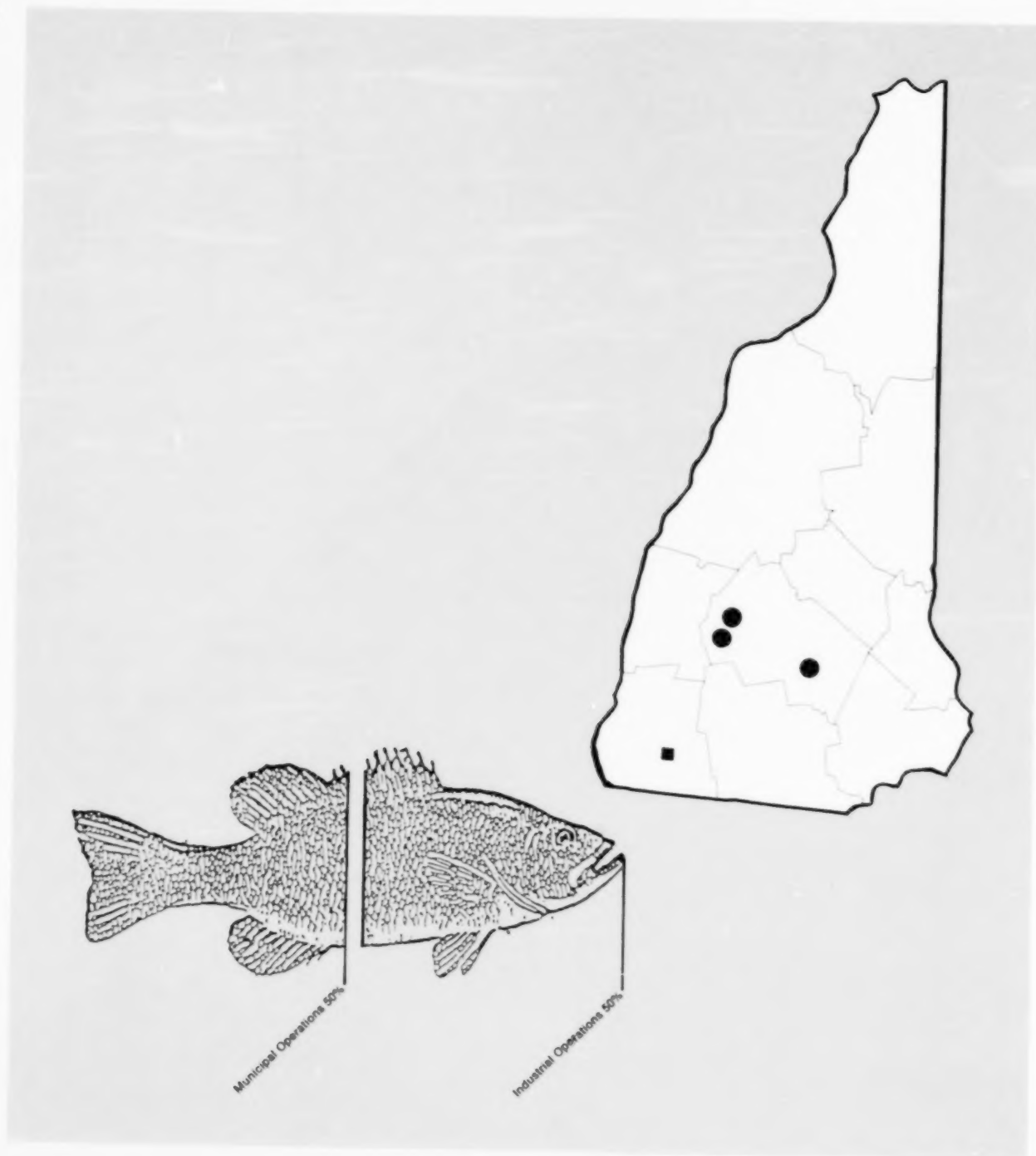


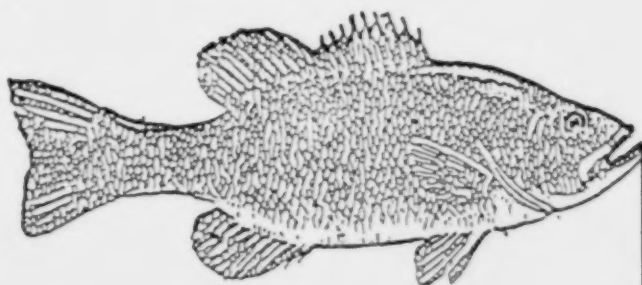
Figure 30

State of New Jersey—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

Fifteen additional Fish Kills
occurred in the State of New
Jersey in 1975. However, reports
on these kills were received too
late and are not shown here.



Unknown 100%

Figure 31

State of New Mexico—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
×	100 000-1000 000
◆	over 1000 000

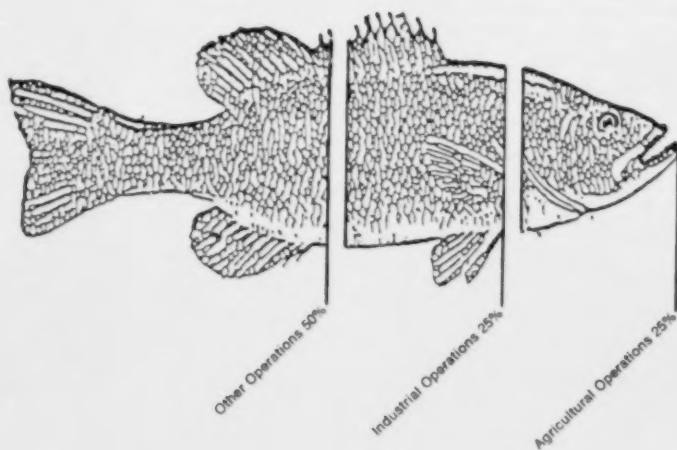
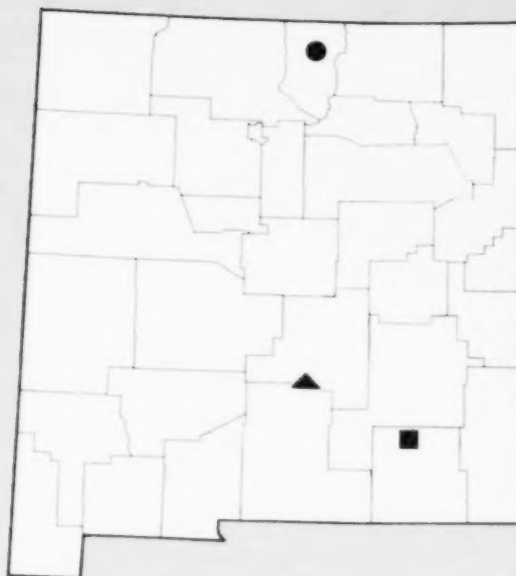


Figure 32

State of New York—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000



Figure 33

State of North Carolina—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

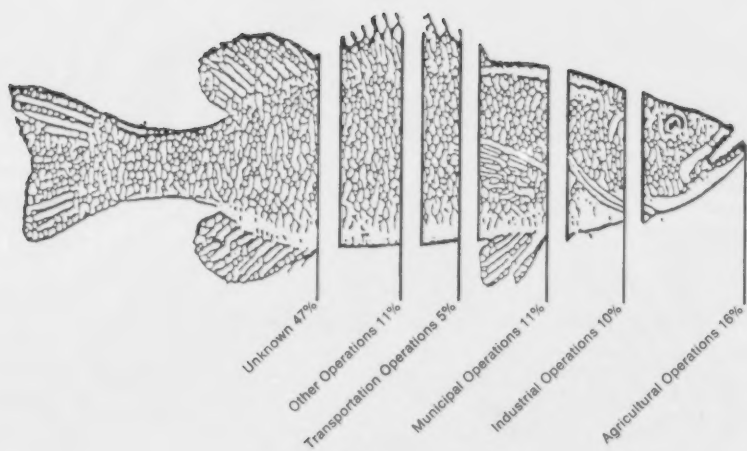
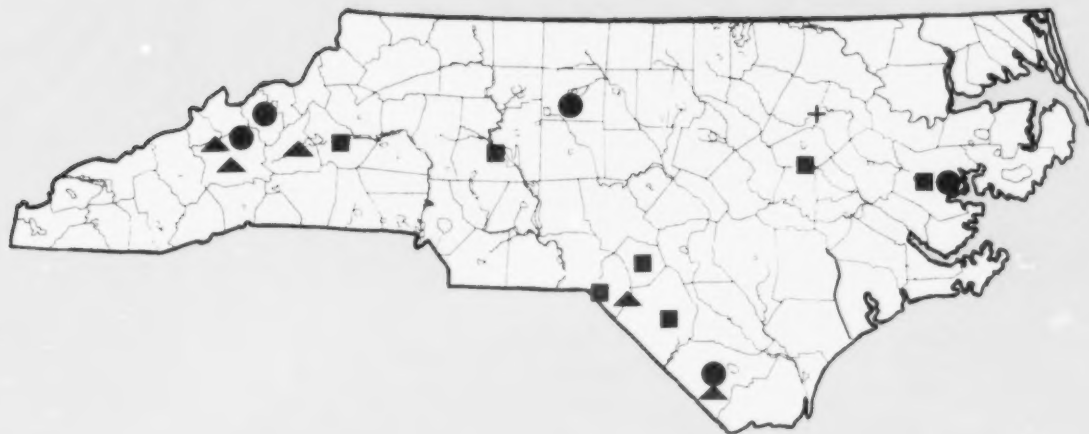


Figure 34

State of Ohio—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- ✚ 10 000-100 000
- ✕ 100 000-1000 000
- ◆ over 1000 000

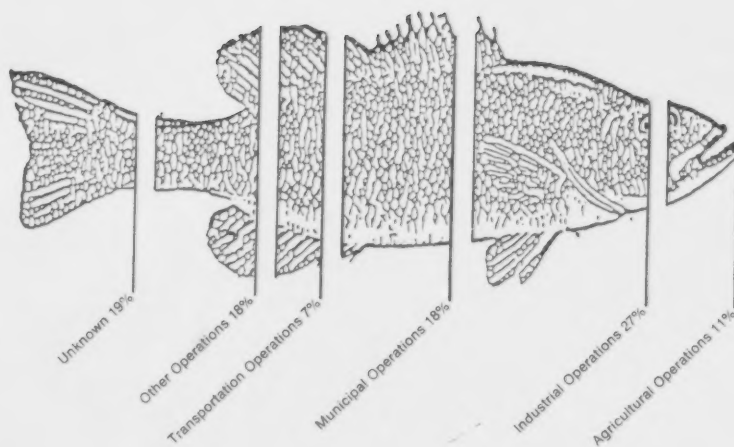
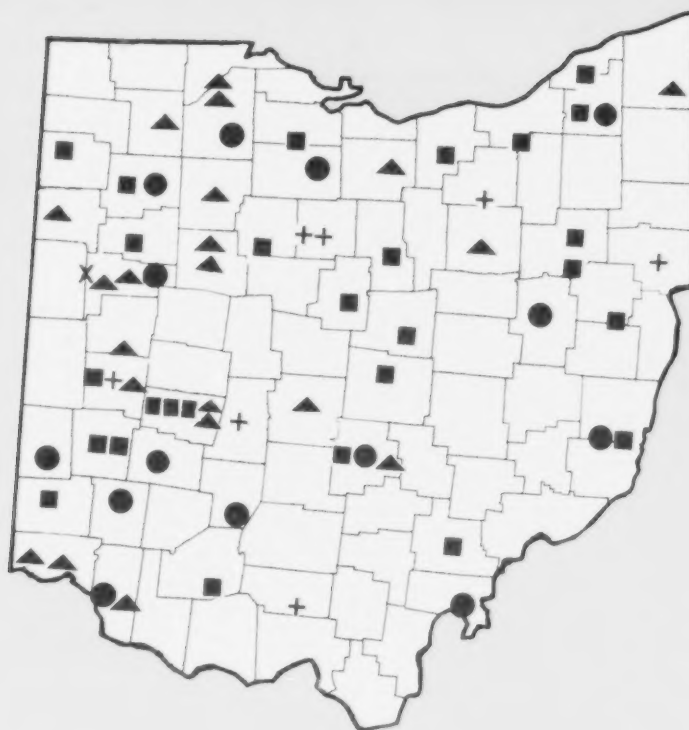


Figure 35

State of Oklahoma—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

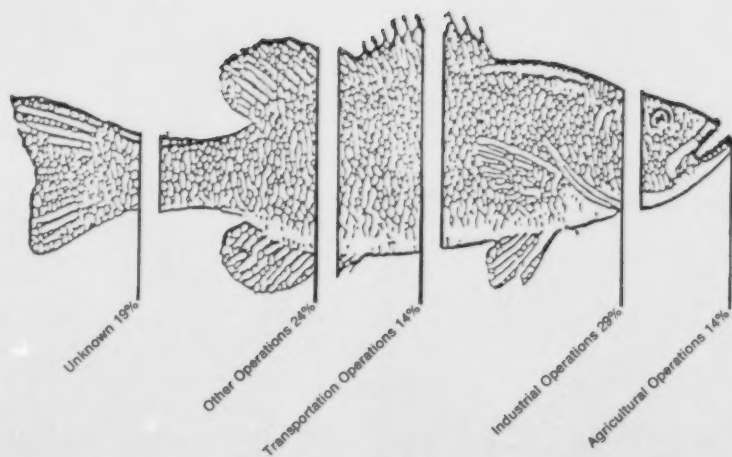
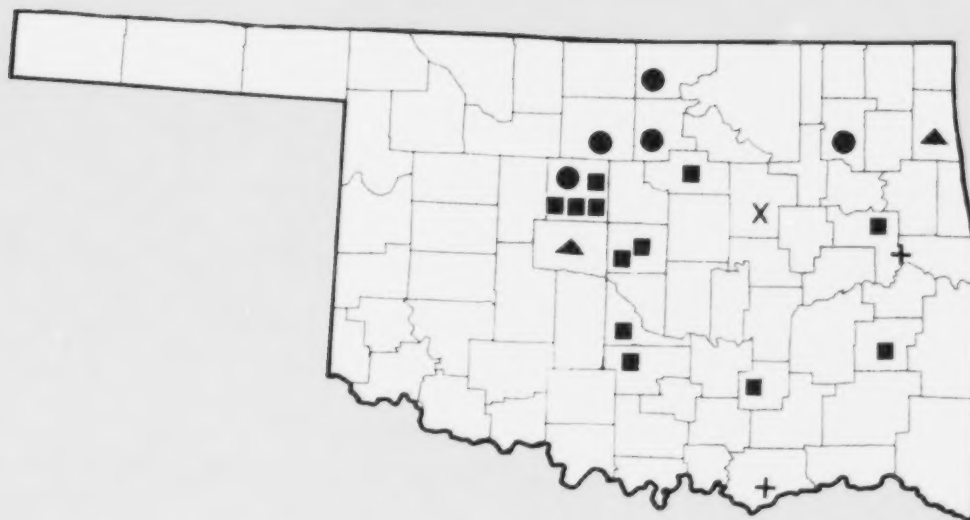


Figure 36

State of Oregon—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
×	100 000-1000 000
◆	over 1000 000

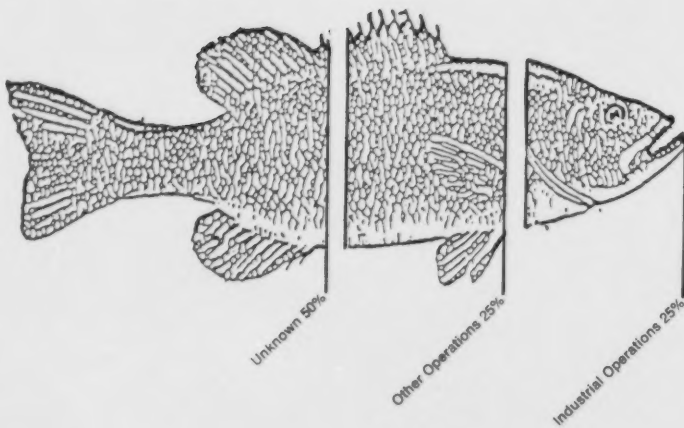


Figure 37

State of Pennsylvania—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

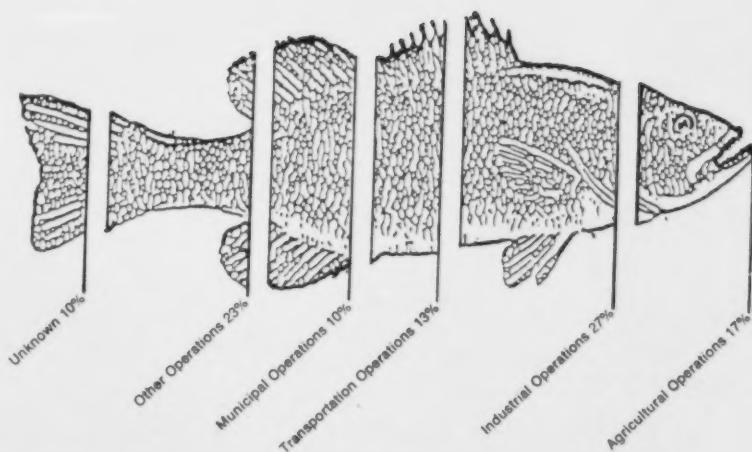
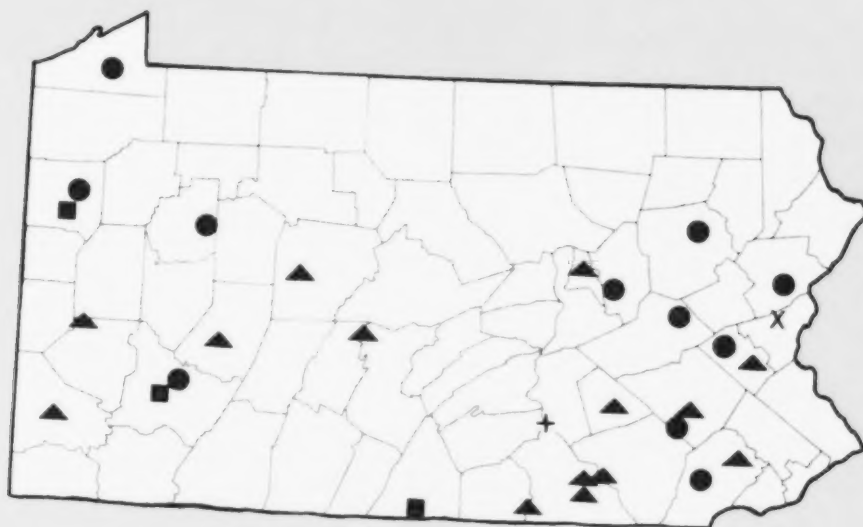


Figure 38

State of South Carolina—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1000 000
◆	over 1000 000

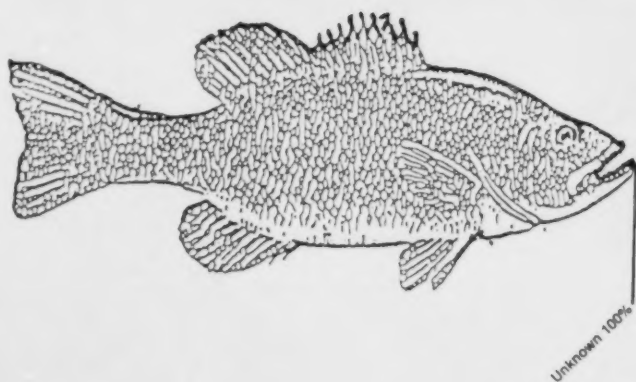
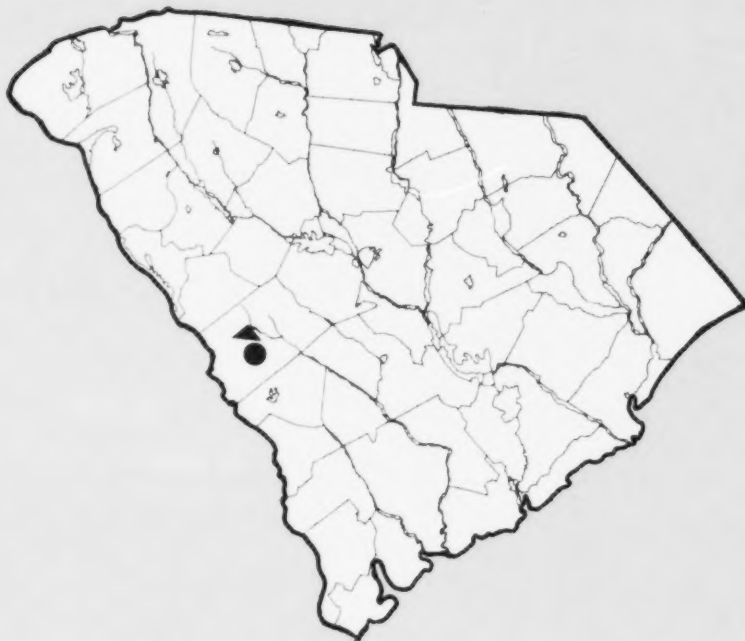


Figure 39

State of South Dakota—Reported
Fish Kills, by Size and Percentage
of Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

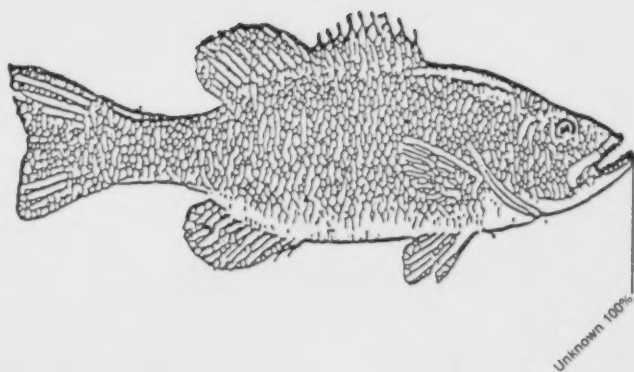


Figure 40

State of Tennessee—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- ✚ 10 000-100 000
- ✕ 100 000-1000 000
- ◆ over 1000 000

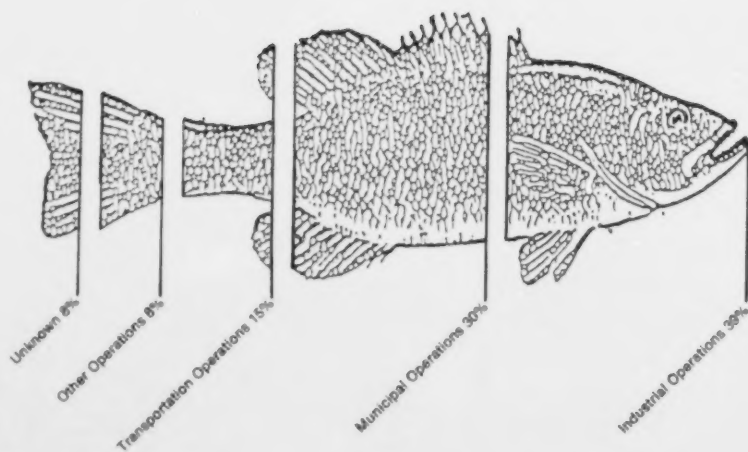
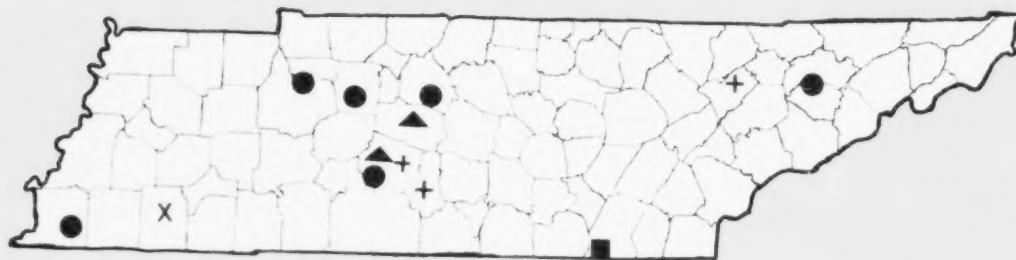


Figure 41

State of Texas—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1 000 000
◆	over 1 000 000

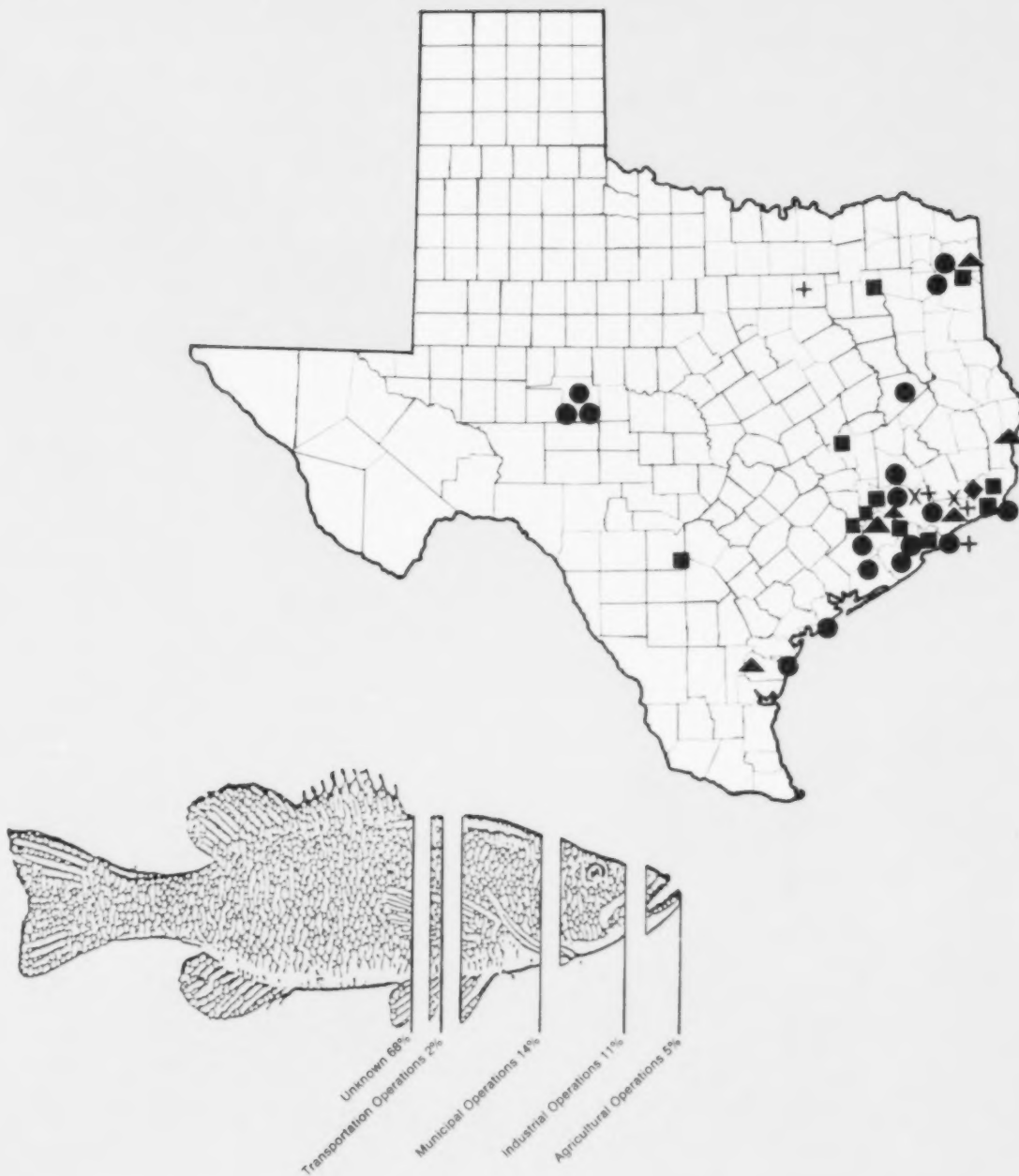


Figure 42

State of Utah—Reported Fish Kills,
by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1000 000
- ◆ over 1000 000

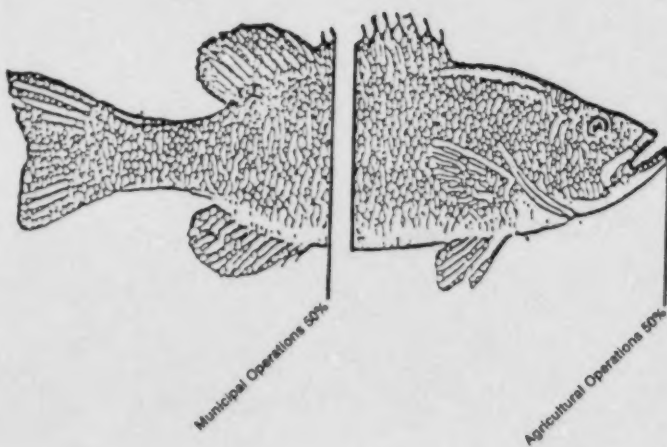
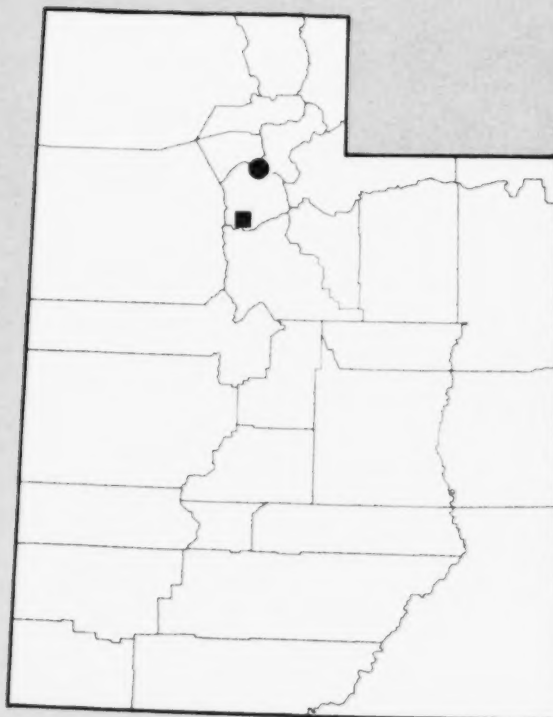


Figure 43

State of Vermont—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1000 000
◆	over 1000 000

58

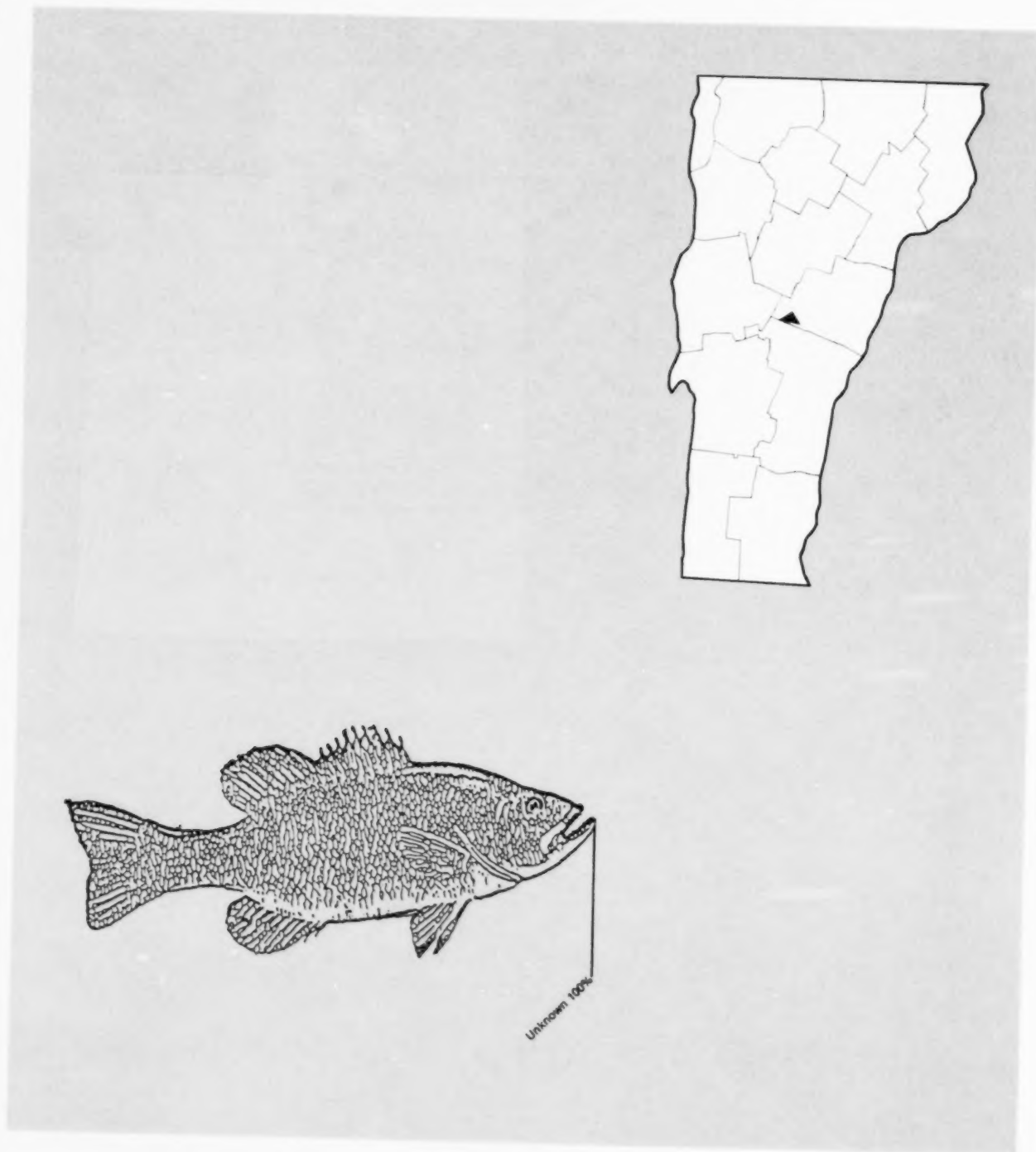


Figure 44

State of Virginia—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

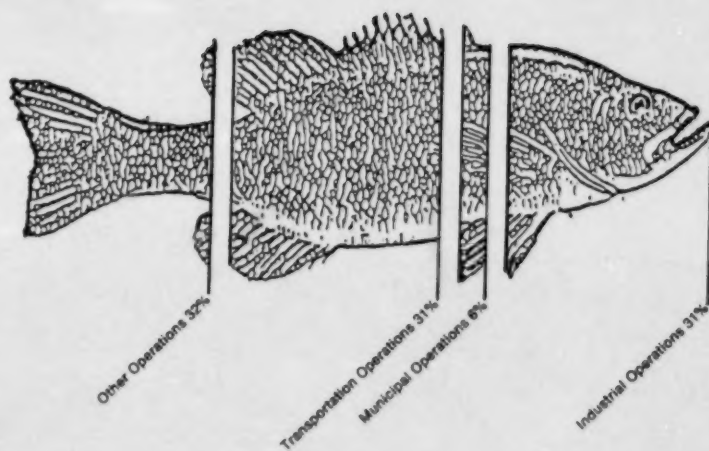
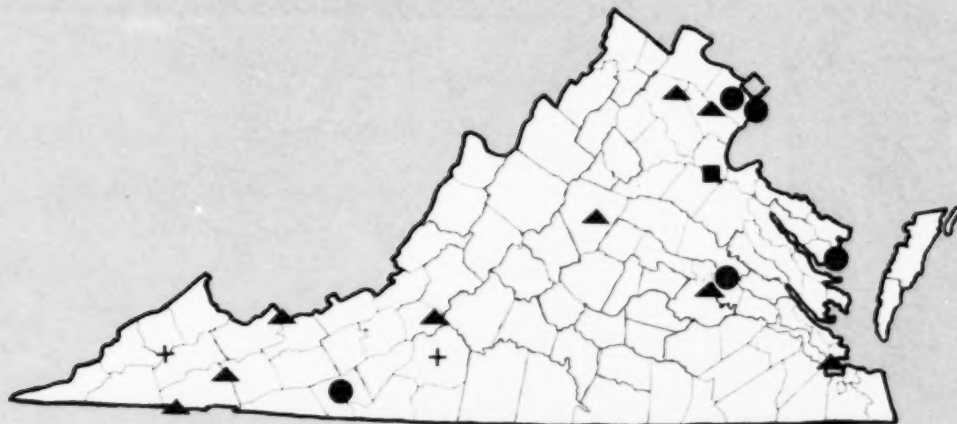


Figure 45

State of Washington—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

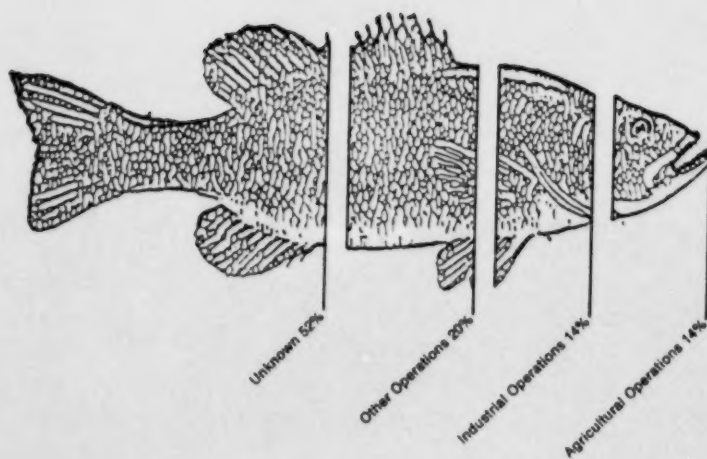
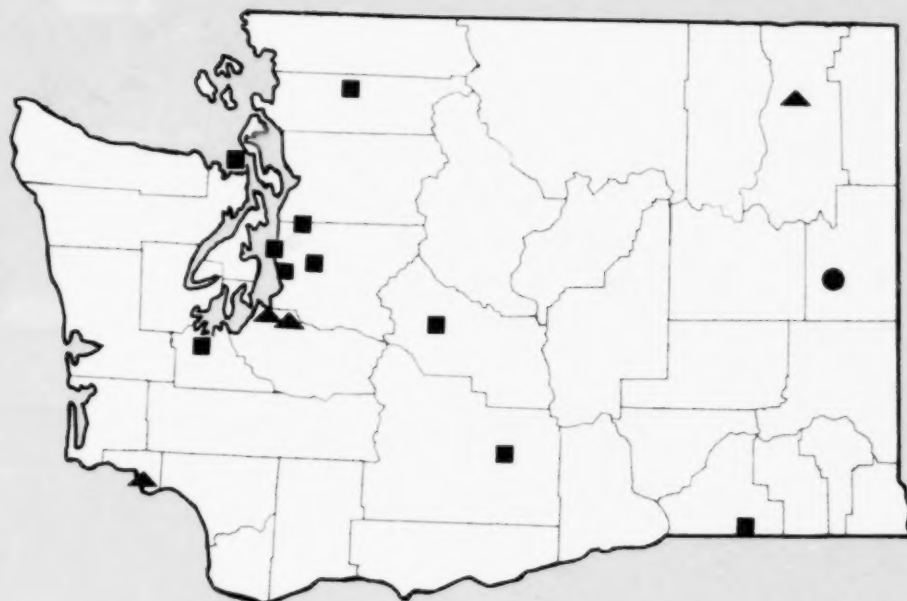


Figure 46

State of West Virginia—Reported
Fish Kills, by Size and Percentages
of Causes—1975

Fish Kills by Size

- 1-100
- 100-1000
- ▲ 1000-10 000
- + 10 000-100 000
- x 100 000-1 000 000
- ◆ over 1 000 000

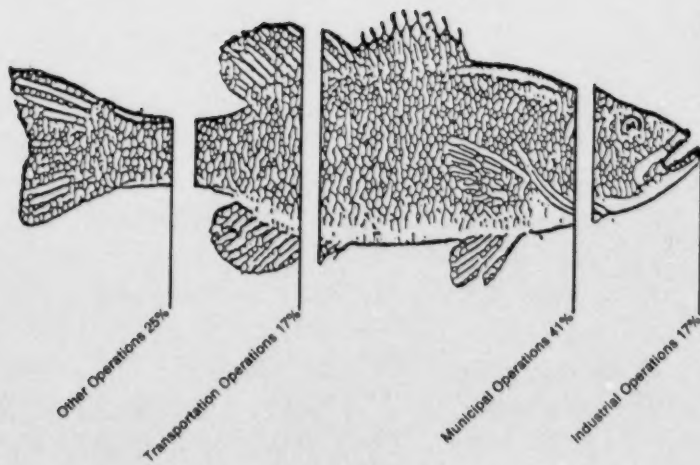
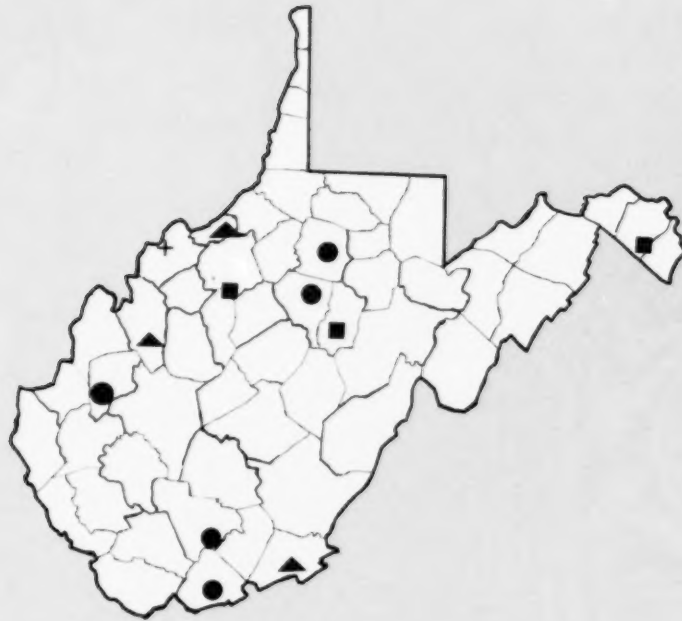
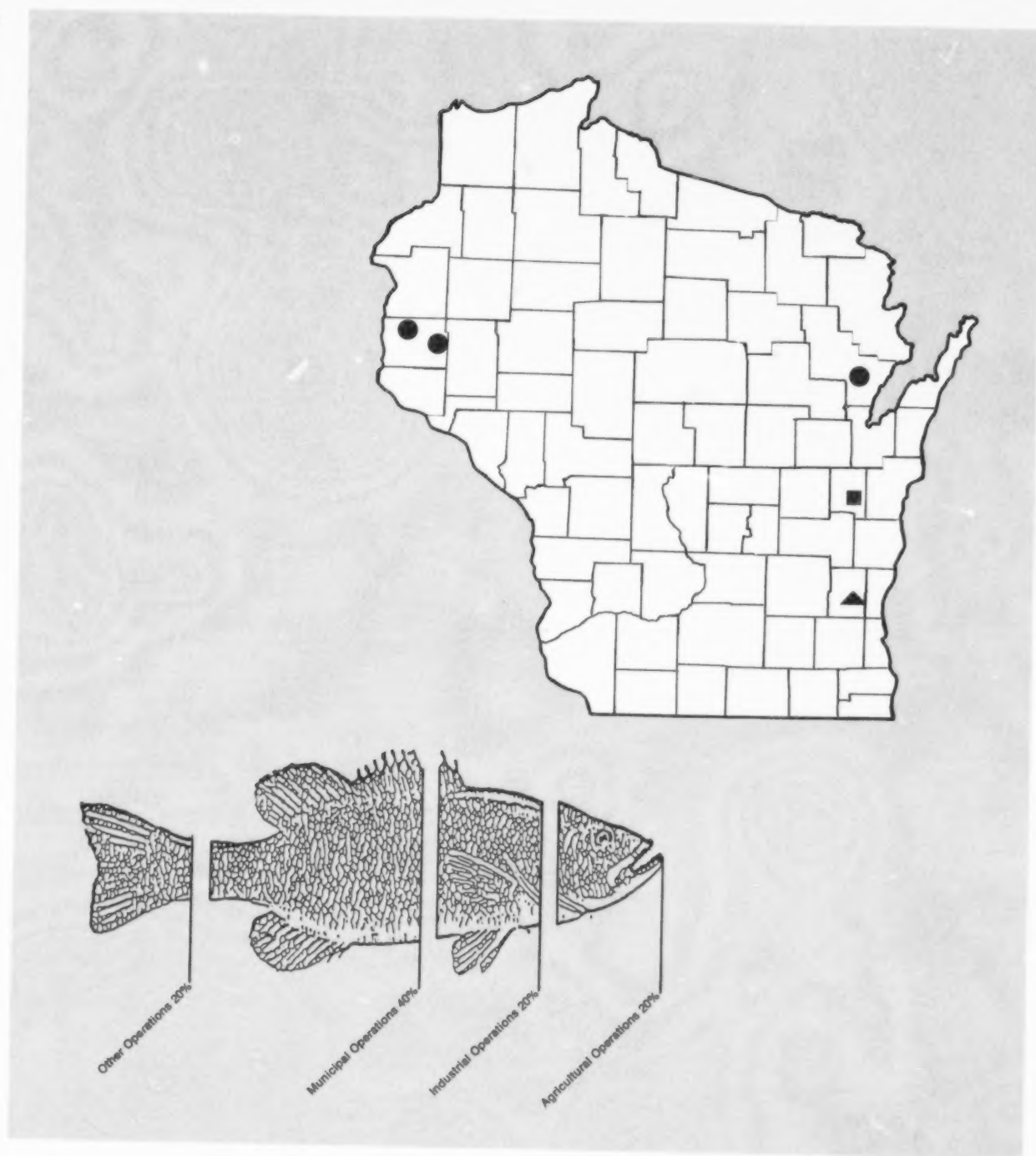


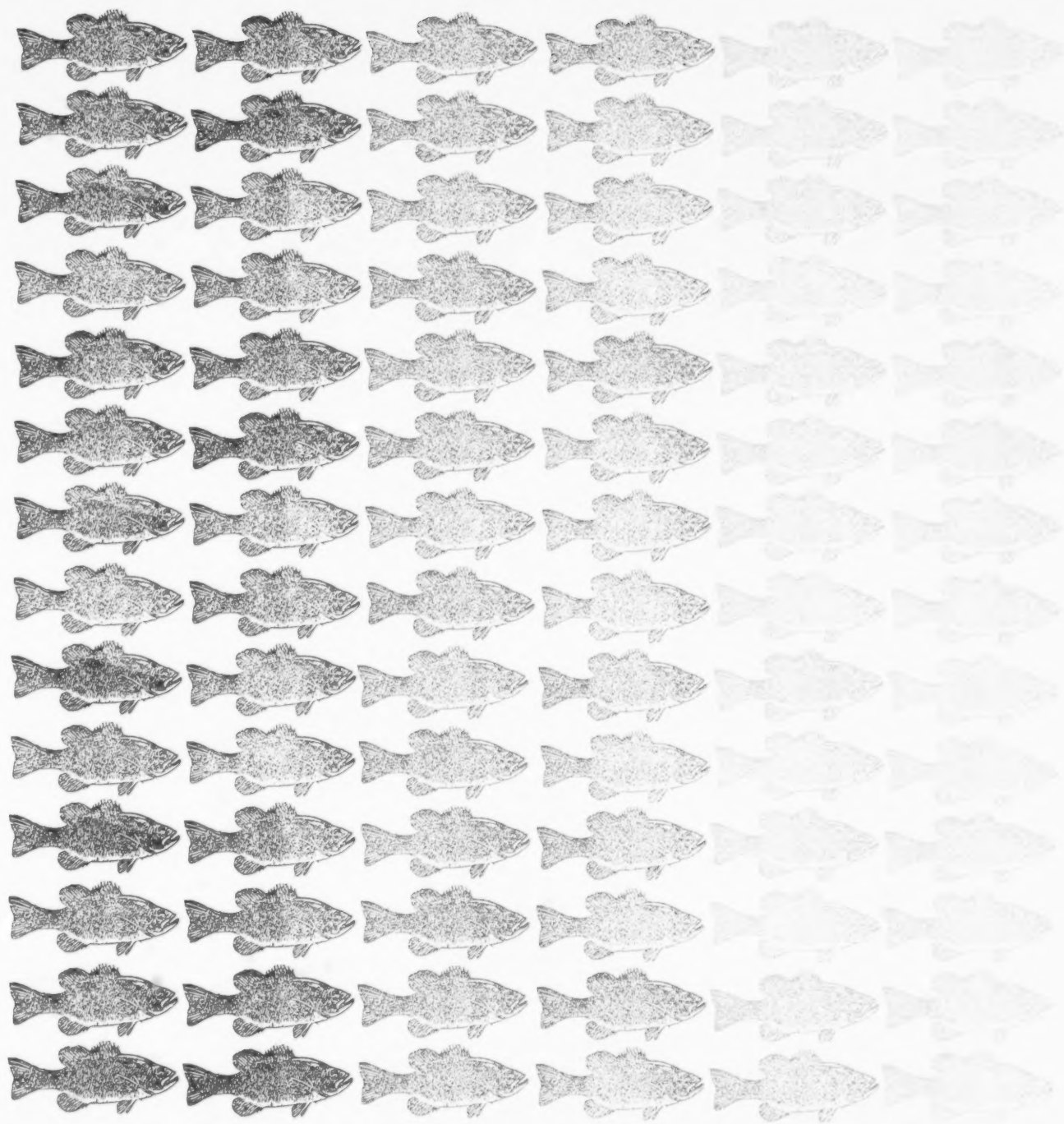
Figure 47

State of Wisconsin—Reported Fish
Kills, by Size and Percentages of
Causes—1975

Fish Kills by Size

■	1-100
●	100-1000
▲	1000-10 000
+	10 000-100 000
x	100 000-1000 000
◆	over 1000 000





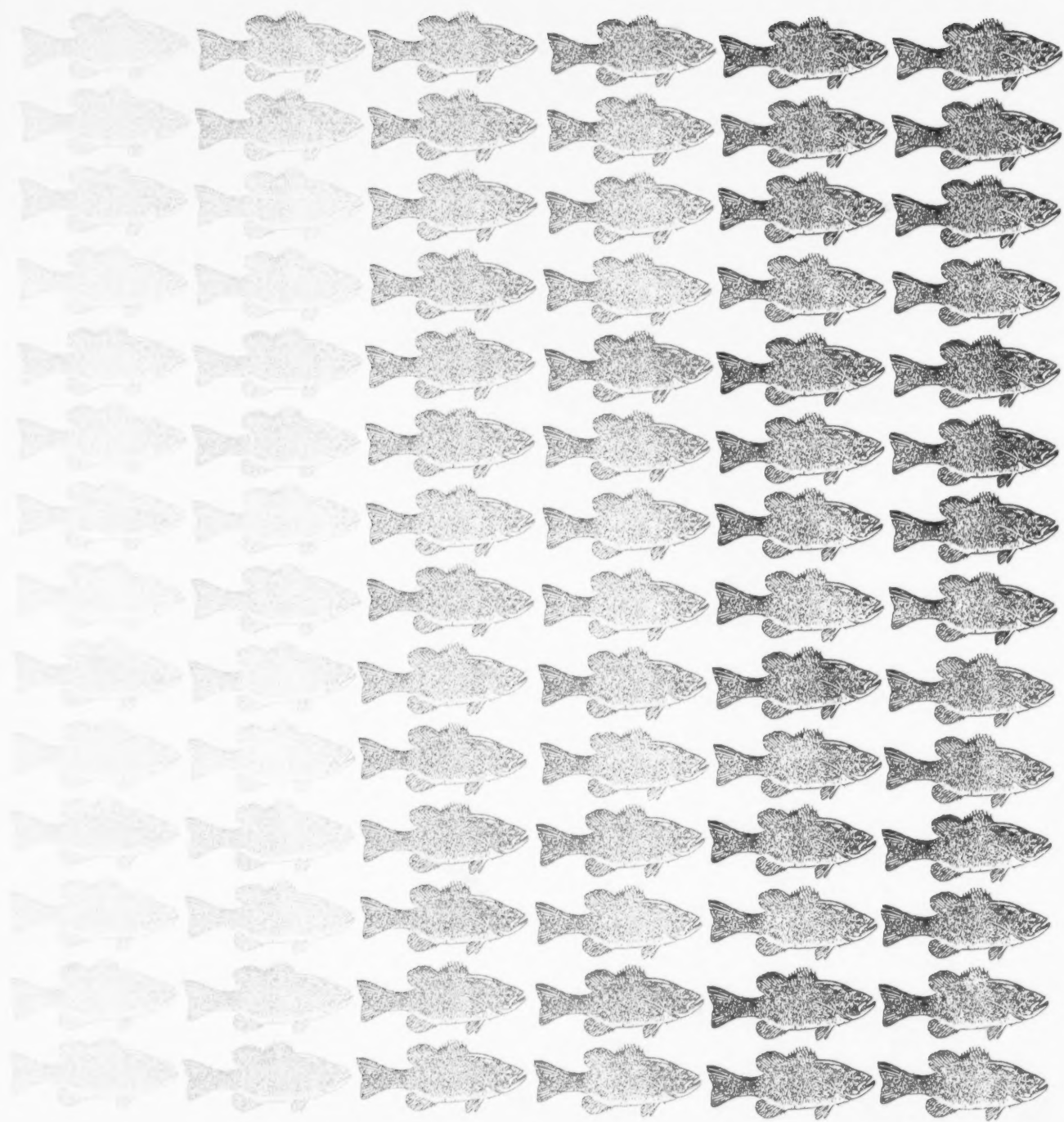


Table 10

**Report of
Fish Kills,
1975
Cause
Identified**

Table 10 lists the 543 reported fish kills for which the pollution-source was specified. Tabular heading information for each fish kill includes state, body of water, city or town, date of kill, cause, type of fish killed (game or non-game), percent of fish killed, severity, extent of damage, and duration.

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles or acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
ALABAMA											
Valley Cr	Bessemer	7 08 75	31	3	97						
York Branch	Cullman	10 22 75	42	32	68		953	4	1M	1	5
Limestone Cr	Decatur	10 03 75	11	12	88		546	1	1M	1	
Wheeler Res	Decatur	12 11 75	24	13	87	14	13 985	2	3M		
Wilson Lake	Florence	7 26 75	11	11	89		4 890	2	43A		
Norman Cr & Trib	Fruiturst	6 29 75	50			26	48 302	2	166A	3	
Tr Persimmon Cr	Greenville	5 28 75	50	60	40	40	25	3	4M	2	
Tr Blackwood Cr	Headland	8 02 75	11	100			354	2	1M		
Catoma Cr	Montgomery	5 28 75	31		100		3 000	3	2M		
Wilson Lake	Muscle Shoals	8 07 75	11	14	86	8	1 795	2	166A	5	
Bartons Branch	Tarrant City	7 02 75	50		100		3 019	3	1M	2	
Big Nance Cr	Town Creek	8 07 75	11	17	83	10	37 392	2	1M	3	
Turkey Cr	Tuscaloosa	2 04 75	42	3	97	97	186	4	3M	2	
ARKANSAS											
Lake Enterprise	Ashley Co	8 22 75	11								
Private Pond	DeSha Co	9 08 75	11				2 500	3	5A		
Gulpha Cr Lake	Garland Co	8 27 75	50								
Private Pond	Lonoke Co	8 26 75	11								
Broughton Cr	Nevada Co	5 09 75	41								
Private Pond	Pulaski	10 07 75	11				4 000	2	4M		
CALIFORNIA											
Lake Lindero	Agoura	10 15 75	11	100			3 000	2			
G Lateral Canal	Calipatria	9 14 75	11		100		10 000	2	14A	1	
G Lateral Canal	Calipatria	9 14 75	11	5	95		2 000	2	2M		
Big Sulphur Cr	Cloverdale	5 06 75	50	70	30		500	2			
Boisa Chica Chnl	Cypress	12 24 75	11		100		2 500	1	7M		
Pulaski South Ca	Fairfield	5 28 75	33	10	90			1	1M		
Scott R	Ft Jones	10 02 75	50	50	50		100	4	8M		20
Lt Greenhorn Cr	Grass Valley	5 09 75	50	100			790	1	2M	1	
Holtville Dm #8	Holtville	11 04 75	11		100		500	2	1M		
Saltion Sea	Imperial	9 27 75	44	10	90		3 000	4	2M	3	
Coyote Cr	Los Angeles	9 25 75	50	100			200 000	1			
Indian Cr Reserv	Markleeville	6 14 75	31				47	3	1M	1	
Drainage Ditch	Marysville	5 12 75	11	96	4		234	3	15M		12
Saltion Sea	North Shore	10 04 75	31	20	80		10 000	2	1M	1	
San Joaquin R	Newman	5 10 75	31	100			500	2	3M		
Canals	Niland	6 26 75	11	100			1 000	2	1M	2	
Pinole Cr	Pinole	4 22 75	42		90		10 000	2	1M		
Webber Cr	Placerville	7 10 75	44	75	25		100	4	4A	1	
Lt Squaw Cr Cove	Redding	6 10 75	21	100			150	4	1A	1	
Shasta Lake	Redding	6 27 75	21	100			50	4	1A	1	
Lt Backhoe Cr Cv	Redding	6 11 75	21	100			600	3	1M		
Lt Squaw Cr Cove	Ripley	9 29 75	11	10	90		100	1	1M		8
Irrigation Canal	Sacramento	5 07 75	34		100		250	4	10A	1	
Chicken Ranch Cr	S Lake Tahoe	8 06 75	31	70	30		1 500	2	1A	1	
Upper Truckee R	Sutter Co	8 02 75	11	3	97		2 000	1	1M	2	
Long Lake	Tracy	9 05 75	11	50	50		200	2			
San Joaquin R	Watsonville	7 19 75	11	100							
Pajaro Cr	Wister	6 25 75	11								
Y Ditch											
COLORADO											
S Platte R	Denver	10 02 75	24	2	98		3 000	3	2M	1	
Cherry Cr	Denver	6 06 75	31		100		560	4	1M		
La Fk-Gunnison R	Gunnison	10 27 75	42	95	5		2 365	1	4M		24
DELAWARE											
Island Cr	Dagsboro	5 22 75	35	100			750	3	1M		
Grays Branch	Laurel	7 10 75	11	25	75		150	3	2M		24
Pond Shellpot Cr	Wilmington	12 10 75	41	10	90		7 166	1	5A		
Trib-Shellpot Cr	Wilmington	5 26 75	34		100		25	2	1M	2	
Farm Pond	Woodside	7 19 75	13	75	25		50	3	1A	1	
FLORIDA											
Williams Point L	Cocoa Beach	4 01 75	31	75	25		600	2	2A	3	
Peace R	Fl Meade	3 02 75	21	60	40		6 000	3	5M	4	
Tree O Ripe Lake	Haines City	7 28 75	11	44	66	23	562	3	8A	1	
Garrison Bight	Key West	6 19 75	50		100			2	15A		
Pt	Lakeland	10 20 75	28	90	10		4 000	3	10A		
Canal & Orange R	Lehigh Acres	3 10 75	28	90	10		40 000	2	2M		
Lt St Marys R	Maccleeny	10 29 75	31	28	72		42 653	2	4M	2	
Woodland Lake	Orange Co	9 30 75	28						1A	1	
Lake Davis	Orlando	6 01 75	12	5	95		2 000	3	18A	2	
Lake Gear	Orlando	4 23 75	11					4	5A	1	
Lake Susannah	Orlando	7 28 75	42	100			26	2	1A	1	
Pt	Plant City	6 05 75	28	90	10		500	2	34A		
Canal	Sunrise	10 01 75	11		100		14	4	1M		
Anson Cr	Tallahassee	2 26 75	25	90	10		1 750	2	2M	1	
No Name (Pond)	Winter Garden	10 06 75	11				600	3		2	
GEORGIA											
Sweetwater Cr	Austel	7 01 75	23	75	25		100	4	15M	2	
Warrior Cr	Cool Spring	8 25 75	13					2	27M		
Cabin Cr	Coosa	8 29 75	23	30	70		7 500	2	1M	4	
Shubbs Pond	Douglasville	2 06 75	50	100			500	4	10A	6	
Pond	Edison	7 13 75	11	100				1	2A	1	

Table 10

**Report of
Fish Kills
1975
Cause
Identified
Continued**

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles or acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
Cabin Cr. Pond	Rome	9 01 75	23	60	40		5,000	3	15A	2	
	Sheelman	9 01 75	11	50				2	3A	99	
HAWAII											
Drainage Channel	Honolulu	12 09 75	25		100		1,000	2	1M	1	
IDAHO											
Thurman Ditch	Garden City	8 01 75	11	10	90		275	1	2M	1	
ILLINOIS											
Mackinaw R.	Anchor	9 06 75	13	3	97	8	173,831	2	14M		
Trb Kaskaskia R.	Douglas Co.	5 23 75	50	1	99	1	5,427	3	2M	1	
Kings Mill Cr.	Bloomington	5 06 75	28	5	95	43	3,329	4	12M	3	
Spring Cr.	Buckley	5 14 75	13					3	4M	1	
Goose Cr.	Deland	6 05 75	12	4	96	11	45,395	2	9M	1	
Sugar Cr.	East Moline	1 21 75	28		100		20,539	3	4M	1	
E Br Panther Cr.	El Paso	11 26 75	12	1	99	2	415	1	1M	4	
Trb Cedar Cr.	Elwood	9 29 75	25	1	99	81	359	3	2A		12
William Orrl Pd.	Frederick	9 02 75	13	100			31,665	2	2M	1	
Swank Cr.	Indianola	7 19 75	12	4	96	1	170	4	1M		
Mendota Cr.	Mendota	10 01 75	13	12	88			4	2M	1	
Mid Fk Vermilion	Potomac	5 12 75	12					3	1A	1	
U I Rifle Rge Pd	Savoy	5 29 75	31	58	42	5	177	3	3M	1	
Scattering Fork	Tuscola	9 03 75	24		100		3,849	4	4M	1	
Clear Cr Apple R	Warren	5 23 75	22	1	99	17	4,207	3	3M	8	
Kings Mill Cr.	Yuton	8 28 75	13	10	90	7	16,850	2	3M		
INDIANA											
Center Run	Centerville	5 08 75	12		100		500	1	2M		
Six Mile Cr.	Charlottesville	6 27 75	13				5,812	2	3M		
Mud & Mill Cr.	Cloverdale	7 16 75	13	50	50		1,670	2	14M	2	
Black Cr & Trib.	Crawfordsville	5 14 75	11	23	77		568	1	5M		
Lick Run	Frankfort	4 05 75	12	25	75		181	4	1M		
Dry Run Cr.	Indianapolis	6 15 75	50		100		500	2	1M		
Fall Cr.	Indianapolis	8 23 75	31	3	97		959	2	1M	5	
Tr Big Raccoon C	Ladoga	6 20 75	13	50	50		800	3	3M	2	
Lt Flatrock R.	Milroy	9 13 75	22	52	48		1,073	2	2M	1	
White R.	Muncie	8 05 75	33	12	88		905	3	1M	1	
Grassy Fork Cr.	Point Isabel	8 22 75	22	2	98		5,000	2	3M	1	
Salamonie R.	Portland	11 06 75	31	99	1		675	3	3M	2	
Bice Ditch	Remington	5 13 75	11		100		10,000	1	2M		
W Fork of Blue R	Salem	8 14 75	31	45	55		1,458	3	2M	1	
Rush Cr.	Salem	8 18 75	13	78	22		608	3	2M	1	
French Lick Cr.	West Baden	7 07 75	31	8	92		1,233	2	1M	3	
Sulphur Cr.	Williams	8 18 75	28	25	75		370	3	2M		
Stoney Cr.	Windsor	7 06 75	13	42	58		1,825	2	3M		
IOWA											
South R.	Indianola	5 24 75	31	1	99		15	4	6M	5	
Clanton Cr.	Martensdale	8 28 75	13	80	20		900	2	3M	3	
KANSAS											
Grouse Cr.	Grand Summit	6 05 75	11	20	80	20	1,000	3	8M	2	12
Cowskin Cr.	Haysville	8 14 75	24	10	90	25	29,933	1	8M	5	
Shady Brook	Hillsboro	8 30 75	13	20	80	30	1,500	2	2M	3	
Payne Cr.	Homewood	5 16 75	13	95	5	40	750	1	1M	1	12
Elm Cr.	Miller	5 23 75	13	40	60	25	250	1	3M	2	
Russell City La	Russell	2 27 75	13	30	70	30	2,100	2	82A		
Spring & Slate Cr	Wellington	11 08 75	25	8	92	10	3,646	2	2M		12
KENTUCKY											
Masons Cr.	Farler	6 10 75	21					1	6M		
Salt R.	Harrodsburg	7 07 75	31				15,819	1	4M	4	
Wolf Cr.	Inez	1 26 75	21				38,425	1	14M	2	
Rush & Crooked C	Marion	9 19 75	31						6M		24
Toms Cr.	Stambaugh	6 19 75	13				12,662	1	2M	2	
Skaggs Cr.	Tompkinsville	7 07 75	13				57,508	2	6M	5	
LOUISIANA											
Bayou Manchac	Baton Rouge	10 10 75	31	5	95	10	30,000	2	10M	9	
Bayou Braud	Carville	6 28 75	50	80	20			3	4M	3	
Dry Creek	Castor	8 23 75	25	64	36	40	800	1	1M	1	
Brush Bayou	Shreveport	8 22 75	31	100		50	500	3	1M	1	
St James Canal	Donaldsonville	2 16 75	31		100	25		1	5M		
Bayou Smith	Gesmar	9 27 75	24					1	2M		
New R.	Gesmar	9 17 75	24	50	50	2	2,000	1	3M		
Bayou Blue	Grosse Tete	6 10 75	50	80	20	10		2	11M		
By Petit Caillou	Houma	8 15 75	11	70	30	15	28,319	2	5M		36
Company Canal	Lockport	8 21 75	11						4M	1	
Patout Canal	Patoutville	12 01 75	22	1	99	90	100	3	2M	5	
Grand Bayou	Pierre Part	7 31 75	50	15	85		370	4	2M		
Intracoastal Wwy	Port Allen	7 01 75	11		100	97	4,000	3	2M		
Grand Bayou	White Castle	8 26 75	11	5	95	20			3M		
Muddy Bayou	White Castle	9 02 75	11	2	98		500	1	3M		36
MAINE											
Maduskeag Stream	Hodgdon	7 10 75	11	100			300	1	1M		

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles or acres affected ³ page 71	Duration	
				Percent game	Percent non game					Days	Hrs
Smith Brook	Houlton	7 16 75	11	100			150	2	1M		24
Trafton Lake	Limestone	7 15 75	11	50	50		300	1	1A		24
MARYLAND											
Spesule Narrows	Aberdeen	1 28 75	25	1	99		466	4	720A		
Tr Lt Antietam C	Boonsboro	8 02 75	31	1	99		173	4	1M		
Hawkins R	Brookville	4 03 75	31	1	99		15,456	2	4M		7
Trip Beaver Cr	Cavetown	7 09 75	50		100		6	4	1A	1	
Flintstone Cr	Flintstone	7 23 75	50	1	99		7,625	1	1M	1	
Tr-Ballinger Cr	Frederick	4 09 75	12		100		200	2	3M		7
St. Martins R	Holiday Harbor	6 18 75	31	1	99	100	10,000	3	5M	3	
Weilers Pond	Lisbon	7 14 75	13	25	75		40	3	1A		
Tr-Lt Catoclin C	Middletown	6 27 75	13		100			3	7M	1	
Honeygo Run	Perry Hall	5 05 75	25		100			4			7
Tr-Rock Cr	Rockville	6 11 75	42	1	99		959	2	1M	2	
MASSACHUSETTS											
Hoosic R	Adams	5 22 75	24		100		150	2	1M		7
Taunton R	Dighton	7 26 75	31			100	15,000	3	3M	19	
Unnamed Pond	Holyoke	8 25 75	50	100			45	3	1A	2	
Assabet R	Hudson	7 10 75	31		100		500	3	1M		4
Charles R	Medfield	6 27 75	31		100		1,000	3	1M		6
Little River	Westfield	7 09 75	23		100		200	3	3M	1	
Little River	Westfield	7 09 75	23		100		100	3	2M		
MICHIGAN											
Tr Shiawassee R	Bancroft	9 30 75	42	10	90		500	1	3M	1	
Fremont Lake	Fremont	7 02 75	50		100		1,000	2	1A		6
Landenbury Drain	Grand Ledge	9 01 75	13	20	80		100	3	1M		
Plaster Cr	Grand Rapids	10 14 75	28	25	75		1,226	1	2M		
Deer Cr	Holland	9 24 75	24	70	30		75	3	1M		
Brent Run	Mt Morris	8 18 75	42	20	80		1,000	1	1M	1	
Crooked Lake	Oden	5 19 75	50	100			400	3	1M		6
Lost Cr	Pewamo	8 03 75	13	5	95		400	1	1M	1	
Tri Rouge R	Rockford	12 09 75	31	100			20	4	1M	1	
Lake Cr	Saranac	5 15 75	13	40	60		320	1	1M		10
MINNESOTA											
Badger Cr	Houston Co	11 15 75	42	100			2,108	1	3M	1	
South Crow R	Hutchinson	11 16 75	24	60	40		100	3	1M		
Duschee Creek	Lanesboro	5 23 75	11	5	95		750	3		2	
Lost Lake	Minneapolis	8 08 75	11		100		5,000	2			
Cascade Cr	Rochester	6 21 75	44	1	99			2	7M		3
MISSISSIPPI											
Bayou Benard	Biloxi	10 23 75	24	60	40		30,000	2	4M	6	
Tallahala Cr	Laurel	8 01 75	23	40	60		5,000	3	6M		12
Hennessy Bayou	Vicksburg	4 03 75	24	5	95		4,000	3	12A	4	
MISSOURI											
Monnegaw Cr	Appleton City	8 09 75	21		100		200	4	1M	1	
White Oak Cr	Avilla	8 11 75	50		100		1,000	3	1M		
Drainage Ditch	Berne	5 12 75	11	20	80		8,000	1	3M		
Smith Pond	Berne	5 12 75	11	100			2,000	1	1A	1	
N Fk Moreau R	California	9 06 75	31	1	99		614	3	1M	2	
Ditch No 10	Campbell	4 29 75	35	48	52		1,380	2	6M		
Fox R	Chambersburg	8 07 75	50	20	80		1,040	2	1M	1	
Bear Cr	Columbia	8 01 75	35	6	94		4,600	2	1M	2	
Clear Cr	Columbia	6 10 75	33		100		50	3	1M	1	
Flat Branch	Columbia	8 22 75	50	8	92		900	1	1M	1	
Caulks Cr	Ellisville	4 22 75	31		100		25	4	3M	1	
Drainage Ditch	Essex	5 24 75	11	30	70		1,400	2	1M	2	
E Fk Fishing R	Excelsior Sprgs	8 29 75	31	20	80		200	2	3M	2	
No Name Cr	Greenville	3 07 75	50		100		25	4	1M		
Trutt Cr	Heatonville	7 31 75	44	100			10	4	1M	1	
Lt R Dringe Ditch	Hornersville	10 16 75	23		100		1,000	3	1M	1	
Johnson Cr	Kanoka	4 17 75	44		100		1,000	3	2M		
Pond	Krakow	3 28 75	44	100			200	4			
Osage River	Lake Ozark	9 08 75	35	60	40		146	4	1M	1	
Dry Auglaize Cr	Lebanon	5 27 75	31	40	60		28,200	2	3M	2	
Shoal Cr	Liberty	8 11 75	31					4	1M		
Chanton R	Macon	6 08 75	11					4	5M		
Bechtold Pond	New Meile	2 13 75	50					3	1A	1	
S Fabius R	Palmyra	10 03 75	42		100		100	4	1M		
Long Cr	Polo	5 17 75	12		100		362	1	2M		
Big R	Potosi	8 16 75	21	10	90		85,378	2	10M	3	
Lt Courttop Cr	Potosi	9 18 75	21	10	90		15,000	2	3M		
Breton Cr	Potosi	3 02 75	25	2	98		2,230	2	1M	1	
Middle Fabius R	Rutledge	7 18 75	50					3	1M		
River Des Peres	St Louis	6 09 75	24		100		5,000	2	1M	3	
Fishpot Cr	St Louis	9 11 75	31					2	4M	1	
James R	Springfield	8 31 75	31	40	60		42,000	2	10M	2	
Tarkio R	Tarkio	7 29 75	12	13	87		105,834	4	8M	2	
Meister Branch	Troy	4 28 75	44		100		25	4	1M	1	
Spencer Cr	Vandalia	4 28 75	13		100			1	2A		
Phelps Pond	Walker	5 12 75	12					1	4M		8
Unnamed Cr	Weldon Spring	4 18 75	44		100			1	2M		
Ball Cr	Zell	3 09 75	13	20	80		300	4			

Table 10

**Report of
Fish Kills
1975
Cause
Identified
Continued**

68

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles or acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
MONTANA											
Browns Lake	Helmsville	7 30 75	50	2	98		3 500	3	500A	7	
Lower Dry Fk Res	Hot Springs	7 7 75	11				1 000	2	346A		
Park Lake	Jefferson City	7 01 75	21	100			250	4	2A	2	
NEBRASKA											
Cozad Drain	Cozad	10 28 75	12	3	97		8 500	2	15M		
Goose Cr	Elsmere	5 29 75	42	99	1		30	4	1M		
Platte R	Grand Island	9 17 75	50	20	80			1	7M		2
Wood R	Grand Island	9 15 75	22					1	2M		
Gudger Pond	Lincoln	6 24 75	13	100			4 020	2	1A		
Cub Cr Trib	Plymouth	6 28 75	12	89	11		27	1	1M		
Kock Pond	Plymouth	6 15 75	12	100			50	2	2M		
Lost Cr	Schuyler	1 18 75	22	26	74		1 050	1	1M		
Glowdusk Pond	Scribner	3 26 75	13	100			125	2	2M		
Notbrara R	Spencer	7 26 75	35	13	87		3 800	3	5A		
Nemaha R	Syracuse	5 24 75	11	34	66		150	3	3M		
Ikes Pond	West Point	4 10 75	13	14	86		7 000	2	2M		
									10A		
NEVADA											
Tailings Cr	Ely	7 05 75	21	100			12 500		3M	1	
NEW HAMPSHIRE											
Connecticut R	Cheshire Co	7 02 75	24	6	94		69	4			
Bow Brook	Concord	4 23 75	28		100		200	2	1M		
Kezar Lake	North Sutton	7 29 75	31		100		1 000	3	160A	1	
Kezar Lake	North Sutton	6 04 75	31		100		200	4	180A	2	
NEW MEXICO											
Pecos R	Artesia	9 08 75	13	15	85			3	15M		
Red R	Questa	4 09 75	21	95	5		400	3	5M		
Alto Lake	Ruidoso	9 13 75	50	100			1 000	3	20A		
Alto Lake	Ruidoso	7 04 75	50	100			700	3	20A		
NEW YORK											
Griffin Cr	Cuba	8 11 75	22		100		400	3	1M		
Griffin & Oil Cr	Cuba	6 27 75	22		100		300	3	8M	1	1
Debruce Hatchery	Debruce	4 04 75	50	100				3	1A		
Florence Cr	Glenmore	8 03 75	33	50	50		2 000	3	1M		
Paddy Hill Cr	Greece	8 20 75	11	100			500	3	1M		8
Owasco Inlet	Groton	7 20 75	34	70	30		250	1	1M	2	
High School Pond	Hauptpaugue	6 20 75	50		100		2 000	1	1A		4
Canandaigua La O	Hopewell	8 17 75	31		100		100	2	7M	1	
Smoke Cr	Lackawanna	9 08 75	31		100		500	2	1M		
Trib 1 Meco Cr	Meco	8 27 75	50	100			30 000	2	1M		
Canisteo R	North Hornell	7 03 75	22	2	98	100	10 000	2	2M	1	
Canisteo R	North Hornell	7 09 75	22		98		10 000	2	8M		
Sparkill Cr	Orangeburg	7 29 75	42	1	99		30 000	1	7M	2	
N Br Lt Salmon R	Parish	11 07 75	50	1	99			3	15M		
Lt Black Cr	Rochester	10 16 75	24	5	95		175	3	2M	3	
Virgil Cr	Virgil	7 07 75	50	85	15		5 000	3	4M		12
W Br Delaware R	Walton	7 17 75	22		100		5 000	3	2M		
Shpbuilders Cr	Webster	7 29 75	31		100		2 500	2	4M		
Cold Spring Bk	Weedsport	10 23 75	44	1	99			2	4M		
Salmon Cr & Tr 3	Williamson	7 20 75	22		100			2	4M		
NORTH CAROLINA											
Sweeten Cr	Asheville	4 22 75	21		100		400	1	3M		
Gregory Trout Pd	Asheville	5 21 75	50	100			4 500	2	3A		1
N Buffalo Cr	Greensboro	11 10 75	24		100		175	2	2M		8
Beaverdam Cr	Laurel Hill	6 02 75	42	50	50		100	3	2M		
Dunns Pond	Maxton	9 29 75	11	100			1 500	3	3A	3	
Clear Cr	Morganton	6 05 75	11		100		63	1			
Bertie Hardin Pd	Raeford	7 20 75	11		100			1	3A		3
Tar R	Rocky Mount	6 07 75	31	85	15		12 000	3	9M	3	
Trib Grants Cr	Spencer	9 09 75	50		100		65	1	1M		
Contentnee Cr	Wilson	9 08 75	31		100		100	4	3M	1	3
OHIO											
Trib L Riley Cr	Allen Co	2 04 75	42				3	4			
Ashtabula R	Ashtabula Co	5 19 75	11				4 778				
Hocking R	Athens Co	8 07 75	21				21	4			
Auglaize R	Auglaize Co	8 11 75	31				3 753				
Captina Cr	Belmont Co	7 20 75	21				339				
Trib Wheeling Cr	Belmont Co	5 19 75	42				33	4			
Trib Mill Cr	Butler Co	4 17 75	25				76				
Willow Run	Carroll Co	8 09 75	25				19	4			
Mad R	Clark Co	7 29 75	31				8 217				
Lt Miami R	Clark Co	9 02 75	25				1				
Lt Miami R	Clark Co	7 12 75	25				51				
Lt Miami R	Clark Co	12 04 75	12				3 345				
Trib Buck Cr	Clermont Co	9 30 75	50				137				
E Fk Lt Miami R	Clermont Co	3 26 75	41				2 023				
Sandy Cr	Columbiana Co	6 30 75	22				12 666				
Sandusky R	Crawford Co	7 09 75	31				25 716				
Olenfandy R	Crawford Co	4 07 75	31				16 136				
Trib Chippewa Cr	Cuyahoga Co	12 26 75	50				2	4			
Trib L Walnut Cr	Fairfield Co	5 06 75	42				276				

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles or acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
Lt Walnut Cr	Fairfield Co	6 15 75	13				1,122				
Sycamore Cr	Fairfield Co	5 21 75	31				45				
Paint Cr	Fayette Co	8 04 75	31				200				
Orientangy Scioto	Franklin Co	8 05 75	31				6,938				
Aum Cr	Franklin Co	5 28 75	31				722				
R Miller Ditch	Franklin Co	6 27 75	50				110				
Trib Cuyahoga R	Geauga Co	8 12 75	25				75				
Punderson Fk Rd	Geauga Co	5 02 75	50				185				
Muddy Cr	Hamilton Co	8 22 75	31				3,000				
Whiskey Run	Hamilton Co	8 23 75	50				1,126				
Trib Ottawa R	Hancock Co	9 23 75	42				1,894				
E Trib Eagle Cr	Hancock Co	8 19 75	31				200				
Taylor Cr	Hardin Co	8 09 75	24				1,009				
Vanhyning Cr	Hardin Co	8 30 75	24				1,175				
Hillsboro Res	Henry Co	8 20 75	22				1,847				
Norwalk Cr	Highland Co	4 12 75	12				6	4			
Kokosing R	Huron Co	9 01 75	35				2,245				
Trib Lake Erie	Knox Co	8 18 75	26				24	4			
N Fk Licking R	Lake Co	7 07 75	50				12	4			
Trib Black R	Licking Co	7 27 75	24				78				
Blodgett Ditch	Lorain Co	11 06 75	22				25				
Ottawa R	Lucas Co	4 30 75	24				3,034				
Spring Fork	Lucas Co	5 22 75	31				6,236				
Champion Cr	Madison Co	8 06 75	13				22,490				
Licksilet Run	Madison Co	8 22 75	50				38,950				
Hog Run	Meigs Co	8 24 75	25				996				
Brush Cr	Miami Co	8 17 75	50				21,010				
Gr Miami	Miami Co	8 21 75	13				6,690				
Mad River	Miami Co	2 21 75	31				25	4			
Indigo Cr	Montgomery Co	1 07 75	50				89				
Trib Blue Cr	Morrow Co	2 22 75	11				18	4			
Trib Scioto R	Paulding Co	3 06 75	22				5	4			
Riley Cr	Pike Co	7 17 75	50				11,603				
Plum Cr	Pulham Co	4 11 75	50				4	4			
Rock Cr	Pulham Co	11 09 75	50				157				
Leatherwood Cr	Seneca Co	8 29 75	13				160				
Crooked Cr	Shelby Co	9 09 75	13				2,973				
L Auglaize R	Tuscarawas	8 05 75	50				185				
Lt Chippewa Cr	Van Wert Co	5 19 75	26				8,462				
Trib Lt Sugar Cr	Wayne Co	6 24 75	23				382				
Shreve Cr	Wayne Co	8 23 75	35				9	4			
Lt Sugar Cr	Wayne Co	10 15 75	31				61				
Wolf Cr	Wayne Co	11 09 75	50				150				
Taylor Run	Wood Co	7 26 75	25				2,096				
	Wood Co	7 29 75	22				217				
	Wyandot Co	7 26 75	22				45	4			
OKLAHOMA											
Grand La	Bernice	5 21 75	50				3,000	2	100A		
Pond	Beckenridge	6 04 75	11	65	35		400	1	3A	1	
Washita R	Bryan Co	9 26 75	25	4	96		37,260	1	1M		36
Tiger Cr	Creek Co	10 05 75	50	1	99		205,420	2	RM	4	
Turkey Cr	Dover	10 20 75	25	10	90		900	1	5A	2	
Four Mile Cr	El Reno	10 03 75	41	8	92		2,405	2	3M	3	
Unnamed Pond	Kingfisher Co	5 26 75	50					1	3A	1	
Pond	Kingfisher Co	5 24 75	50	100					15A	1	
Cooper Cr	Kingfisher Co	5 20 75	12		100		12	4	1M	1	
Unnamed Pond	Kingfisher Co	5 24 75	50	100				1	3A	1	
Flood Control Pk	McCain Co	2 02 75	25					4	8A	3	
Beef Cr	Maysville	11 13 75	28	20	80			4	1M	1	
Grand R	Muskogee	2 28 75	41					4	1M	1	
Unnamed Pond	Perry	6 07 75	42	25	75		300	4	1A	1	
Verdigris R	Rogers Co	9 05 75	28	10	90		750	3	2M	3	
Stillwater Cr	Stillwater	1 21 75	25	10	90			4	1M		
Farm Pond	Tonkawa	5 29 75	11	80	20		200		2A		
OREGON											
Johnson Cr	Portland	6 04 75	26	1	99		18,550	2	2M		10
Beerman Cr	Seaside	7 16 75	50	99	1		9,021	2	1M		1
PENNSYLVANIA											
Lehigh Canal	Catasauqua	5 31 75	25	100			192	4	1M	1	
Sucker Run	Coatesville	12 05 75	24		100		550	2	1M		
Cabin Branch Cr	East Prospect	7 30 75	50	5	95		1,028	2	1M	2	
Gray Brook Kennel	Fairview	8 25 75	11	100			380	2	1M		9
Kratzner Run	Grampian	7 18 75	42		100		1,200	2	2M		
Oil Cr	Hanover	8 22 75	31	20	80		1,645	2	3M	2	
Coplay Cr	Hokendauqua	4 25 75	50	9	91		1,119	3	1M	1	
Loyalhanna Cr	Kingston	5 27 75	24	100			773	3	1M	1	
Mill Cr	Lebanon Co	10 03 75	50	100			3,317	1	1M	1	
Trib Welsh Run	Montgomery Twp	6 14 75	11		100		78	4	2M	1	
Unnamed Run	New Alexandria	6 17 75	25		100		300	3	1M	1	
Swiftwater Cr	Poccono Twp	6 03 75	24	100			125	4	1M	1	
Markle Run	Reading Twp	9 04 75	13	85	15		1,182	2	4M	7	
Tr Barshinger Cr	Red Lion	8 06 75	13	12	88		1,010	2	2M		6
Leatherwood Cr	Rockville	10 12 75	21	10	90		19,000	2	4M		
Trib Clarks	Rush Twp	8 28 75	42	50	50		220	2	1M		

Table 10

**Report of
Fish Kills
1975
Cause
Identified
Continued**

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles of acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
Inb-Sandy Cr	Sandy Lake	5 26 75	50	100			14	4	1M	1	
Carney Run	Strongstown	7 21 75	50	100			2 400	1	1M	1	
Montaur Cr	Tyngsboro	8 19 75	11	2	98		3 012	2	2M	2	
Unnamed Run	Waltz Mill	6 14 75	50		100		100	4	2M		
Brush Cr	Warrendale	7 31 75	31		100		2 285	2		1	
Georges Run	Washington	7 04 75	21		100		6 600	2	2M	4	
Chickadee Cr	Washingtonville	4 15 75	35	10	90		8 085	2	7M	3	
S Br French Cr	Waterford	7 28 75	50		100		400	3			
Pickering Cr	West Pikesland	8 21 75	42	25	75		1 325	2	1M		
Grand Central Cr	Wind Gap	2 01 75	42	7	93		103 078	2	12M	3	
Fishing Cr	Windsor	4 02 75	24	29	71		1 615	2	1M	1	
TENNESSEE											
Cherokee Res Emb	Bean Station	6 02 75	42	80	20	1	130	3	1A	1	
Hatchie R	Bolivar	6 24 75	26	1	99	4	273 168	2	64M	4	
Chickamauga Res	Chattanooga	4 02 75	24	3	97	40		2	50A	2	
Rutherford Cr	Columbia	7 08 75	21	1	99	7	68 239	2	2M	2	
Rutherford Cr	Columbia	6 25 75	50	4	96	10	3 444	2	2M	2	
Jones Cr	Dickson	7 13 75	31	4	96		692	3	1M		
Harpeth R	Franklin	7 09 75	31	2	98		1 783	3	2M		
Coal Cr	Lake City	10 01 75	42	2	98		66 447	2	4M		
Big Rock Cr	Lewisburg	8 14 75	31	3	97		15 361	2	3M	2	
Big Bigby Cr	Mt Pleasant	6 10 75	34		100		585	3	1M	1	
Trace Cr	Waverly	9 11 75	31	1	99	10	186	3	1M	1	
Loosahatchie R	Woodstock	9 11 75	24	5	95	10	200	4	1M	2	
TEXAS											
San Jacinto Bay	Baytown	5 27 75	11		80		6 000				
Brazos R Auth Ca	Brainerd Co	3 10 75	11	20	100		700				
Thompson Cr	Bryan	6 24 75	44	70	30		100				
Municipal La	Bryan	6 27 75	31	100			500				
U Carbide Ditch	Calhoun Co	10 30 75	24		100		300				
HL&P Old Disc Ca	Chambers Co	9 29 75	35		100		10 000 000				
Baker Slough	Domino	7 23 75	23	80	20		10 000	2	3M		
Long Slough	Domino	10 20 75	23	22	78		500	3	4M		
Trinity R	Houston Co	7 30 75	31		100		1 000				
Taylor Bayou	Jefferson Co	1 31 75	22		100		24				
Big Cypress Cr	Lone Star	12 14 75	26	100			600		1M		
Trout Cr	Newton Co	7 10 75	31	60	40		1 737		1M	2	
Red Arroyo Draw	San Angelo	3 26 75	31	40	60		1 000		1M	2	
Red Arroyo Draw	San Angelo	3 27 75	31	40	60		1 000	1	1M	2	
UTAH											
Mill Cr	Bountiful	8 14 75	33	100			300	1	2M		
Beckstead Irrig	South Jordan	7 15 75	11	6	94		90	1	1M	2	4
VIRGINIA											
Carlsbrook Sub La	Albemarle Co	2 12 75	50	100			1 017	3	3A	1	
Trib-Dogue Cr	Alexandria	5 29 75	50		100		200	3	1M	1	
Lake Barcroft	Annandale	6 12 75	42	25	75		135	4	1M	1	
Whitney Branch	Bluefield	4 22 75	22		100		4 600	2	1M	1	
Trib-Beaver Cr	Bristol	11 20 75	42		100		2 000	2	1M	1	
Lick Cr	Danite	11 04 75	21	1	100		10 666	2	3M		
Deep Run	Fredericksburg	8 02 75	24		50		90	4	1M	1	
L Reed Island Cr	Hillsville	6 18 75	42	10	90		719	3	6M	2	
Private Pond	Kilmarnock	6 27 75	50	50	50		300	3	1A	2	
Hokums Branch	Manassas	8 04 75	42	100			3 692	2	20M	14	
James R	Newport News	6 05 75	31		100	100	2 936	2	1M	1	
James R	Richmond	5 08 75	24	60	40		7 418	2	24M	2	
Roanoke R	Rocky Mount	7 29 75	42	40	60		28 704	2	1M	1	
Pigg R	Saltville	6 29 75	28	10	90		2 810	2	1M	1	
Robertson Br	The Plains	7 18 75	50	100			4 236	1	1A	1	
Trib-Broad Run		3 07 75	50								
WASHINGTON											
McDowell La	Colville	3 01 75	50	100			5 000	3	33A		
Shelabarger Cr	Edmonds	6 06 75	28	100			20	4	1M		
Anderson La	Port Townsend	10 26 75	50					4	59A		
Unnamed Cr	Puyallup	12 06 75	25	20	80		5 000	1	1M		
Walla Walla R	Reese	8 11 75	11					1	8M		
Lake Washington	Seattle	4 11 75	50		100			4	1M	1	
Fennel Cr	Sumner	8 27 75	13	100			5 000	3	2M		
WEST VIRGINIA											
Mill Run	Berkeley Co	6 16 75	50	40	60		100	4	1M		
Elk Cr	Clarksburg	9 19 75	32	3	97		709	3	3M		12
Hurricane Cr	Hurricane	9 02 75	31	20	80		131	2	1M		8
Sugar Cr	Jackson Co	8 29 75	44	5	95		1 252		1M		
Hans Cr	Monroe Co	9 19 75	50	12	88		6 000	2	1M		12
Berry Run	Parkersburg	4 15 75	50	1	99		41 945	2	1M		
Willow Island Cr	Pleasants Co	8 05 75	44	2	98		8 172	2	1M		
Brush Cr	Princeton	6 30 75	32	2	98		903	3	3M		
Whitestick Cr	Raleigh Co	10 07 75	25		100		150	4	1M	5	
Marsh Run	Richie Co	7 07 75	25		100		65	4	1M		6
Buckhannon R	Upshur Co	9 03 75	31	50	50		51	4	1M		
West Fork R	Weston	7 11 75	33	1	99		189	3	2M		

Body of water	City or town	Date	Cause ¹ see code page 71	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ² see code page 71	Estimated miles of acres affected ³ page 71	Duration	
				Percent game	Percent non- game					Days	Hrs
WISCONSIN											
Manitowish R	Chilton	7 19 75	50	51	49		100	2	1M		
Section 11	Glenwood City	5 - 75	13	80	20		500	2	5M		
Cedar Cr	Jackson	7 22 75	31	10	90		5 000	2			
Willow R	New Richmond	9 05 75	31	50	50		350	2	2M		24
Oconto R	Oconto Falls	6 26 75	23		100		600	4	1M		

CODES

¹ CAUSE

- 10 Agricultural Operations
 - 11 Pesticides (Herbicides, Insecticides, etc.)
 - 12 Fertilizers
 - 13 Manure, Silo, Feedlot Drainage, etc

- 20 Industrial Operations
 - 21 Mining
 - 22 Food & Kindred Products
 - 23 Paper & Allied Products
 - 24 Chemicals
 - 25 Petroleum
 - 26 Metals
 - 27 Combinations
 - 28 Other

- 30 Municipal Operations
 - 31 Sewerage System
 - 32 Refuse Disposal
 - 33 Water System
 - 34 Swimming Pool
 - 35 Power

- 40 Transportation Operations
 - 41 Rail
 - 42 Truck
 - 43 Barge or Boat
 - 44 Pipe Line

- 50 Other Operations

² SEVERITY

- 1 Complete
- 2 Heavy
- 3 Moderate
- 4 Light

³ ESTIMATED MILES OR ACRES AFFECTED

- A = Acres
- M = Miles

Table 11
Report of
Fish Kills
1975
Cause
Not Specifically
Identified

Table 11 lists the 168 individual fish kills with pollution source not specified. Kills from natural causes are not included.

Body of water	City or town	Date	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ¹ see code page 74	Estimated miles or acres affected ² page 74	Duration	
			Percent game	Percent non game					Days	Hrs
ARKANSAS										
Taylor Bay	Augusta	6 23 75								
Private Pond	Cabot	6 23 75	10	90			4	5A		
Rock Roe Bayou	Clarendon	7 27 75					3			
Horseshoe Lake	Crittenden Co	8 04 75	20	80			1	2M		
S Fk Saine R	Grant Co	6 26 75								
Saine R	Miller Co	8 25 75								
Smith Park Lake	Pine Bluff	8 21 75				800	2			
Lake Langhofer	Pine Bluff	4 19 75					3	2A		
Stackwater Harbr	Polk Co	7 15 75								
Rolling Fork Cr	Pulaski	7 24 75								
Twin Lakes #2	Pulaski	11 14 75								
Private Pond	Pulaski	10 21 75								
Old River Lake	Pulaski Co	8 29 75				2 500				
Cypress Branch Cr	Pulaski Co	8 18 75								
Cypress Branch	Pulaski Co	4 19 75								
Fouche Cr	Pulaski Co	7 29 75					4			
Bayou Meto	Pulaski Co	7 29 75								
Deep Slough	Union Co	8 21 75								
Private Pond	Union	11 19 75					2			
CALIFORNIA										
2047 Canal	Arbutckie	6 02 75		100		75	3	10M	11	
Lost Lake	Blythe	11 25 75	100			25	4			
Castaic Lake	Castaic Junction	10 08 75	40	60		1 100	4	1A		
Willow Cr	Colusa Co	7 20 75	100			75	2	10M		6
Crow Canyon Cr	Hayward	7 08 75	10	90		1 500	2	1M	1	
Lake Hemet	Hemet	7 04 75	100			4 000	2			
San Gabriel R	Long Beach	2 05 75				2 000	2			
Carquinez Strait	Martinez	5 29 75	100	100			2	1M	1	
Upper Truckee R	Meyers	9 10 75	100			25	4	1M		
Russian R	Monte Rio	6 04 75		100		2	4	1M		
Sump Pond	Pleasant Grove	5 30 75	8	92		100	4	1M		
San Francisco By	Redwood City	6 02 75	100			782	2	1A	5	
Peckham Ranch Pk	Rio Oso	5 31 75	4	96		200	2	5M	10	
Slough Del Paso	Sacramento	7 06 75	100			25	4	1A		
Chicken Ranch St	Sacramento	9 27 75		100		150	3	1M		
Natomas Drain	Stockton	10 01 75	28	72		350	4	5M		24
Calaveras R Esty	Stockton	4 05 75	92	8		3 000	1			
Stockton Ca	Sutter Co	5 24 75	84	16		301	4	1M		12
Meridian Farms C	Tracy	10 25 75	75	25		510	3	2M		
Old R	Westmorland	6 04 75	100			5 000	1	5M	2	
ventura R	W Sacramento	6 09 75		100		150	4	1M	1	
Drain		6 02 75		100		3 500	2	5M	7	
Tow Drain										
COLORADO										
St Vrain R	Longmont	9 02 75	10	90		1 000 000	1	3M	1	
CONNECTICUT										
Johnsons Cr	Bridgeport	9 22 75			100	12 500	1	1M	4	
Rooster R	Trumbull	6 03 75		100		150	2	1M		3
FLORIDA										
Blue Sink	Barberville	5 28 75	100				4	6A	1	
Lake Catherine	Castleberry	5 01 75								
Clermont Canal	Clermont	4 20 75		100		100	3	1A	1	
Spring Lake	Eatonville	5 21 75	25	75		150	4	5A	2	
Peace R	Fl Meade	12 02 75					4	20M	3	
Lake Matland	Matland	5 21 75				109	4	1A	1	
Sky Lake	Orlando	7 16 75					4	1A	1	
Lake Catherine	Orlando	5 19 75					4	1A	1	
Fairview Lake	Orlando	5 26 75	100			15	4	1A	1	
LI Lake Barton	Orlando	9 30 75	60	40		250	4	30A	1	
La Jennie Jewel	Orlando	4 04 75			100	150	4	74A	2	
Lake Tyner	Orlando	5 05 75				25	4	3A	1	
Mead Manor Lake	Oviedo	5 01 75					4	7A	1	
Rodman Reservoir	Palatka	9 12 75	10	90		90	4	1A	1	
Rodman Dam	Palatka	10 01 75	100				4	1A	2	
GEORGIA										
Buffalo Cr	Carrollton	4 30 75	98	2		1 000	3	5M		
Corbin Cr	Hiwassee	7 27 75	90	10		500	1	2M		1
ILLINOIS										
Bode Lake	Barrington	8 26 75	66	34	34	3 454	2	6A	4	
Wolf Lake	Chicago	4 09 75	98	2		1 958	3	1M	3	
Homewood Pond	Decatur	7 20 75	86	14	13	2 009	2	3A	2	
S Br Kishwaukee	Dekalb	9 26 75	4	96	1	26 799	2	4M	4	
S Br Kishwaukee	Dekalb	8 22 75	11	89	17	27 588	3	5M	2	
Trih Menominee R	Menominee Sta	5 11 75	20	80	79	351	3	1M		
Stony Cr	Muncie	7 07 75	15	85	2	22 404	2	3M	1	
TR S FK Sangamon	Sharpsburg	9 08 75	18	82	4	10 205	2	3M	3	
INDIANA										
Sugar Cr	Greenhill	3 26 75				1 200	3	8M		

Body of water	City or town	Date	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ¹ see code page 74	Estimated miles or acres affected ² page 74	Duration	
			Percent game	Percent non- game					Days	Hrs
Mounts Run St Joseph R	Gadsden Mishawaka	3 22 75 8 13 75	98	2		200 1,320	3 3	2M 3M	1	
IOWA Squaw Cr	Ames	10 15 75				200		1M	2	
KANSAS Little Mill Cr	Lenexa	4 21 75	75	25	25	1,500	1	3M		
KENTUCKY Mill Cr	Monroe Co	6 19 75				31,514	2		2	
MARYLAND Comsat Pond	Clarksburg	8 22 75	100			30	3	1A	18	
MASSACHUSETTS Mt Hope Bay Beaverdam Brook Straits Pond	Brayton Point Framingham Hull	7 14 75 7 17 75 7 22 75		100		32,200 1,000 9,000	2	2M 24A		4
MICHIGAN Lake Erie Ecipse Cr Patter Drain	Erie Lincoln Park Livonia	4 21 75 5 23 75 1 20 75	25 10	75 90 100		1,200 300 50	2 3 2	10A 1M 1M		12
MISSOURI Ditch #79	Hornersville	9 08 75	3	97		3,098	2	3M		
MONTANA Missouri R	Great Falls	7 15 75	1	99		3,000	2	1M		12
NEBRASKA Victoria Spgs La Kretzman Pond Johnson La Maahs Pond Salt Cr Lazy Ab Pond	Anselmo Bassett Lexington Lincoln Lancaster Springview	9 04 75 8 02 75 8 24 75 8 03 75 10 02 75 7 29 75	100 100 100 100 21 100			150 144 300 4,200 11,200 100	4 3 4 2 1 3	4A 1A 2800A 3A 18M 1A		
NEVADA Solar Meadows Byu	Gerlach	7 10 75		100		10,000	2	250A	14	
NEW JERSEY Atlantic Ocean	Atlantic City	8 08 75	100			1,200				
NORTH CAROLINA Livingston Cr Hornby Cr Mixons Cr Pamlico R Price Cr Enka Lake Juniper Swamp Saddletree Canal N Fk Catawba R	Acme Asheville Bath Bath Burnsville Enka Guide Lumberton Marion	9 03 75 8 26 75 6 22 75 6 13 75 8 07 75 5 28 75 8 24 75 6 11 75 6 21 75	36 100 100 10 90 10 93 50 10	64 100 100 90 90 7 50 90		2,994 400 185 1,750 576 100 3,000	2 2 1 3 3 3 1	3M 15040A 5030A 5M 10A 2M 2M 9M	0 0 1 1 1 3	1 5 5
OHIO Miami Erie Canal Kopp Cr Miami Erie Canal Mud Run Blacklick Cr Old Town Run Blanchard River Gr Miami R Seven Mile Cr Paramour Cr South Cr Leatherwood Cr Tuscarawas R W Br Nimishellen Apple Cr	Auglaize Co Auglaize Co Auglaize Co Clark Co Franklin Co Greene Co Hancock Co Montgomery Co Preble Co Richland Co Sandusky Co Shelby Co Stark Co Stark Co Wayne Co	6 24 75 6 23 75 8 31 75 8 04 75 8 04 75 8 11 75 9 05 75 1 28 75 4 21 75 5 13 75 9 09 75 5 22 75 7 22 75 7 12 75 7 25 75				172 112,966 5,944 42 5 860 37 19 210 9 40 94 62 75 865				
OKLAHOMA Crutcho Cr Fouche Maline Cr Spring Lake Leader Cr	Del City Latimer Co Oklahoma Co Tupelo	9 11 75 7 30 75 4 21 75 10 16 75		100		24	4	1M	1	
OREGON Johnson Cr Johnson Cr	Portland Portland	7 09 75 10 08 75	1	100 99		200 10,000	2 2	1M 4M	1 2	10
PENNSYLVANIA Powdermill Run Connaught Outlt C Wyomissing Cr	Carlton Greenwood Twp Mohnton	11 18 75 5 27 75 9 08 75	100	100		134 610 335	4 4	1M 1M 1M	1 1	6

Table 11

**Report of
Fish Kills
1975
Cause
Not Specifically
Identified**

Continued

74

Body of water	City or town	Date	Type of fish killed		Percent kill with commercial value	Estimated fish killed	Severity ¹ see code page 74	Estimated miles or acres affected ² page 74	Duration	
			Percent game	Percent non- game					Days	Hrs
SOUTH CAROLINA										
Langley Pond	Aiken	10 19 75	5	95		750	4	100A		24
Langley Pond	Aiken	8 30 75	5	95		3,500	2	100A		24
SOUTH DAKOTA										
Big Sioux R	Sioux Falls	8 19 75	96	4		72	3	1M		12
TENNESSEE										
Radnor Lake	Nashville	6 24 75	99	1		580		40A		
TEXAS										
Bayport Ditch B	Bayport	6 25 75		100		100				
Drainage Ditch A	Bayport	8 07 75		100		200				
Bayport Ditch A	Bayport	4 14 75		100		1,100				
San Jacinto Bay	Baytown	10 07 75		100		20,000				
Amico Ca	Brazoria Co	3 14 75		100		300				
Sulphur R	Cass Co	10 11 75	22	78		505				
Cedar Bayou	Chambers Co	7 31 75		100		600,000				
Corpus Chris Bay	Corpus Christi	6 16 75	100			200				
Lake Bay Hubbard	Dallas Co	4 30 75	100			100,000				
C Lee Pond	Deer Park	5 09 75	100			114				
Big Cr	Fort Bend Co	2 03 75	52	48		4,060				
Oyster Cr	Fort Bend Co	6 06 66		100		3	4			
Bolivar Pass	Galveston Co	7 02 75		100		20,000				
Offatts Bayou	Galveston Co	7 02 75		100		400				
Pond	Galveston Co	5 29 75		100		50				
Grand Saline Cr	Grand Saline	11 05 75	100			102				
Clear Cr	Harris Co	2 28 75	45	55		100				
Buffalo Bayou	Harris Co	8 21 75	1	99		300				
Cypress Cr	Harris Co	11 20 75	70	30		2				
S Mayde Cr	Harris Co	8 01 75	50			1,000,000				
Scott Bay	Harris Co	10 10 75		100		40				
Lt Cypress Cr	Jefferson	8 06 75		100		1,000				
Rodair Gully	Jefferson Co	3 22 75	75	25		40	3	1M		
Jeff Co Dr D #7	Jefferson Co	5 11 75		100		1,000				
Chicon Cr	Natalia	7 14 75		100		100				
Seabourne Cr	Rosenberg	1 06 75	70	30		100	3			
S Concho R	San Angelo	3 24 75		100		500				
C Christi Harbor	Viola	8 22 75	4	96		1,178	2	3M	3	
Porters Cr	Wharton Co	1 31 75	75	25		1,000				
VERMONT										
Third Br White R	Randolph	7 26 75	1	99		2,000	2	1M		
WASHINGTON										
Skamokawa Cr	Cathlamet	10 07 75	100			2,361	2	1M	1	
Chapman La	Cheney	8 03 75	100			1,000	4			
Yakima R	Cleelum	10 04 75					4	1M	1	
Baker La	Concrete	5 31 75					4			
E Fk Issaquah Cr	Issaquah	9 15 75					4			
Black La	Olympia	7 18 75				50	4	1M	1	
Yakima R	Sawyer	9 05 75	1	99			4	1M	1	
Thornton Cr	Seattle	6 10 75	100			20	2	2M	1	
							4	1M	1	

CODES

1 SEVERITY:

- 1 Complete
- 2 Heavy
- 3 Moderate
- 4 Light

2 ESTIMATED MILES OR ACRES AFFECTED

- A=Acres
- M=Miles

Appendices

Introduction

Appendix A lists the State agencies actively participating in the fish kill reporting program. Observers are encouraged to report any sightings of dead fish to their appropriate State agency. Since, if the cause is not readily apparent, time is important to an investigation, reports should be submitted as soon as possible, preferably by telephone to the local offices of the agency (game wardens, for example). If no local office is present, reports can be mailed to the agency at the addresses shown.

Appendix B is a reproduction of the report form showing information desired. It is recognized that the casual observer cannot normally provide much of the information; however, location, estimates of the number of dead fish and tissue and date of the observation are extremely important. Also important is the probable source of pollution where it can be identified.

Appendix C defines pollution sources in terms of the type of operation involved. Since the number of dead fish may not be indicative of the severity of the pollution, proper State officials should be notified even when only a small number of dead fish are seen floating on a water body. In cases where the fish kill was due to causes other than man-created pollution, State officials are still interested in determining the cause, and should be notified.

Appendix A

76 State Agencies

Alabama Department of
Conservation
Game and Fish Division
Fisheries Section
64 North Union Street
Montgomery, Alabama 36104

Water Improvement Commission
Surveillance and Monitoring Section
749 State Office Building
Montgomery, Alabama 36104

Department of Fish and Game
Habitat Protection Section
Support Building
Juneau, Alaska 99801

Arizona Game and Fish
Department
2222 West Greenway Road
Phoenix, Arizona 85023

Arkansas Game and Fish
Commission
Fisheries Division
Little Rock, Arkansas 72201

California Department of Fish and
Game
Environmental Services Branch
1416 Ninth Street
Sacramento, California 94814

Department of Natural Resources
Division of Wildlife
6060 Broadway
Denver, Colorado 80216

Connecticut Board of Fisheries and
Game
Fish and Water Life Unit
Department of Environmental
Protection
State Office Building
Hartford, Connecticut 06115

Department of Natural Resources
and Environmental Control
Division of Fish and Wildlife
Fisheries Section
Dover, Delaware 19901

Florida Department of
Environmental Regulation
2562 Executive Center Circle, East
Montgomery Building
Tallahassee, Florida 32301

Georgia Game and Fish
Commission
Trinity-Washington Street Building
270 Washington Street, S.W.
Atlanta, Georgia 30334

Division of Fish and Game
1179 Punchbowl Street
Honolulu, Hawaii 96813

Idaho Fish and Game Department
Bureau of Fisheries
P.O. Box 25
Boise, Idaho 83707

Illinois Department of Conservation
Division of Fisheries
605 State Office Building
400 South Spring Street
Springfield, Illinois 62706

Indiana State Board of Health
Division of Water Pollution Control
Water Quality and Standards
Branch
1330 West Michigan Street
Indianapolis, Indiana 46206

Iowa State Conservation
Commission
300 4th Street
Des Moines, Iowa 50319

Kansas Forestry, Fish and Game
Commission
P.O. Box 1028
Pratt, Kansas 67124

Department of Fish and Wildlife
Resources
Capital Plaza Tower
Frankfort, Kentucky 40601

Louisiana Stream Control
Commission
Drawer F.C., University Station
Baton Rouge, Louisiana 70803

Fish and Game Department
State Office Building
Augusta, Maine 04330

Maryland Department of Water
Resources
State Office Building
Annapolis, Maryland 21401

Massachusetts Department of
Natural Resources
Division of Marine Fisheries
State Office Building
Government Center
100 Cambridge Street
Boston, Massachusetts 02202

Massachusetts Division of Fisheries
and Game
Field Headquarters
Westboro, Massachusetts 01581

Water Resources Commission
Department of Natural Resources
Stevens T. Mason Building
Lansing, Michigan 48926

Minnesota Department of Natural
Resources
Division of Fish and Wildlife
390 Centennial Building
St. Paul, Minnesota 55155

Mississippi Air and Water Pollution
Control Commission
P.O. Box 827
Jackson, Mississippi 39205

Missouri Department of
Conservation
1110 College Avenue
Columbia, Missouri 65201

Missouri Department of
Conservation
Division of Fisheries
P.O. Box 180
Jefferson City, Missouri 65101

Department of Fish and Game
Room 134, Cogswell Building
Helena, Montana 59601

Nebraska Game and Parks
Commission
2200 North 33rd Street
Lincoln, Nebraska 68503

Nevada Department of Fish and
Game
P.O. Box 10678
Reno, Nevada 89510

New Hampshire Water Supply and
Pollution Control Commission
P.O. Box 95
Concord, New Hampshire 03301

Division of Fish, Game and
Shellfisheries
Bureau of Fisheries Laboratory
Lebanon, New Jersey 08833

New Mexico Department of Game
and Fish
State Capitol
Santa Fe, New Mexico 87501

Department of Environmental
Conservation
Albany, New York 12201

North Carolina Department of Water
and Air Resources
Box 27048
Raleigh, North Carolina 27611

North Dakota Game and Fish
Department
Fisheries Division
103 1/2 South Third Street
Bismarck, North Dakota 58501

Ohio Department of Natural
Resources
Division of Wildlife
Fountain Square
Columbus, Ohio 43224

Oklahoma Department of Wildlife
Conservation
Fisheries Division
1801 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105

Fish and Wildlife Commission
307 State Office Building
Portland, Oregon 97201

Pennsylvania Fish Commission
P.O. Box 1673
Harrisburg, Pennsylvania 17120

Rhode Island Department of
Natural Resources
Division of Fish and Wildlife
83 Park Street
Providence, Rhode Island 02903

South Carolina Wildlife and Marine
Resources Department
Division of Game
P.O. Box 167
Columbia, South Carolina 29202

South Dakota Department of Game,
Fish and Parks
Division of Game and Fish
State Office Building #1
Pierre, South Dakota 57501

Tennessee Game and Fish
Commission
Doctors Building, Room 600
Nashville, Tennessee 37203

Texas Parks and Wildlife
Department
Fish and Wildlife Division
John H. Reagan Building
Austin, Texas 78701

Utah Department of Natural
Resources
Division of Fish and Game
1596 West North Temple
Salt Lake City, Utah 84116

Vermont Fish and Game
Department
Research and Management Center
Roxbury, Vermont 05659

Virginia State Water Control Board
Bureau of Enforcement
P.O. Box 11143
Richmond, Virginia 23230

Washington State Department of
Ecology
P.O. Box 829
Olympia, Washington 98501

West Virginia Department of Natural
Resources
Division of Wildlife Resources
Charleston, West Virginia 25305

Wisconsin Department of Natural
Resources
Bureau of Standards and Surveys
Box 450
Madison, Wisconsin 53701

Department of Natural Resources
Bureau of Water Quality
Box 450
Madison, Wisconsin 53701

Wyoming Game and Fish
Department
Box 712
Lander, Wyoming 82520

Appendix B

78

Report of Pollution Caused Fish Kill

Sample Form

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF WATER PLANNING AND STANDARDS WASHINGTON, D.C. 20460		Form Approved OMB No. 158-R00 36
REPORT OF POLLUTION-CAUSED FISH KILL		FOR OWP USE ONLY
1A. LOCATION (Stream, Lake, Ocean, etc; Latitude-Longitude)		2. DATE OF KILL
B. NEAREST TOWN AND COUNTY	C. STATE	3. TYPE OF WATER ☐ FRESH ☐ SALT ☐ ESTUARY
4. POLLUTION SOURCE - TYPE OF OPERATION		
A. AGRICULTURAL OPERATIONS ☐ POISONS (Pesticides, etc) ☐ FERTILIZERS ☐ MANURE DRAINAGE, ENSILAGE LIQUORS, OR FEED LOT OPERATIONS ☐ HANDLING OF EQUIPMENT AND CONTAINERS	B. INDUSTRIAL OPERATIONS ☐ MINING ☐ CHEMICALS ☐ FOOD AND KINDRED PRODUCTS ☐ TEXTILES ☐ OTHER: ☐ METALS ☐ PETROLEUM ☐ PAPER AND ALLIED PRODUCTS ☐ RUBBER AND PLASTICS	C. MUNICIPAL OPERATIONS ☐ SEWERAGE SYSTEM ☐ REFUSE DISPOSAL ☐ WATER SYSTEM ☐ SWIMMING POOL ☐ POWER (Public Service) ☐ PEST CONTROL
D. TRANSPORTATION OPERATIONS ☐ RAIL ☐ TRUCK ☐ BARGE OR BOAT ☐ PIPE-LINE ☐ AIR	E. CONSTRUCTION OR OTHER ☐ CONSTRUCTION ☐ OTHER:	F. ☐ UNKNOWN

G. SPECIFIC POLLUTANT OR FACTOR CHANGING WATER CHARACTERISTICS (Name of chemical, thermal discharge, etc.)					
5. TYPE OF FISH KILL		6. EST. NO. KILLED	7. SEVERITY		
GAME	%		☐ TOTAL ☐ HEAVY ☐ MOD. ☐ LIGHT		
NON-GAME	%	8. EXTENT OF AREA AFFECTED		9. DURATION OF CRITICAL EFFECT	
TOTAL	100 %	A. MILES OF STREAM	B. ACRES OF LAKE	A. DAYS	B. HOURS
COMMERCIAL	%				
10. ADDITIONAL REMARKS (Include effects on other than marine life, e.g., shellfish, waterfowl, etc)					
11. REPORTING OFFICIAL		12. AGENCY MAILING ADDRESS		13. DATE OF REPORT	

EPA Form 7500-8 (Rev. 7-75) PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.
INSTRUCTIONS: Upon completion fold card to show proper address and staple or tape long edge together.

Glossary

Sources of Pollution by Type of Operation

Fish kills may be caused by pollution from a large number and variety of sources. To facilitate reporting of kills, these pollution sources have been categorized according to the types of operations (municipal, industrial, etc.) producing the pollution. Following are definitions of each operation to include breakdowns into subcategories.

Agricultural Operations

Pollution from agricultural operations results primarily from wastewater runoff from fields where various chemical compounds are used for pest control and fertilizers. Runoff from feedlot operations are also included under this category. In addition, a probable cause of pollution lies in the handling of various pesticides or fertilizers, the cleaning of equipment used to disperse these chemicals, and the handling and disposal of the containers.

□Poisons (Pesticides, Etc.)

Poisons include any of the "cides" used at the site of agricultural operations, which may be introduced into a water body through a runoff after a rain or through settling from the air.

□Fertilizers

This subcategory applies to commercial fertilizers after they have been delivered for use.

□Manure Drainage, Ensilage Liquors, or Feed Lot Operations

In addition to the operations named in this heading, this subcategory includes other agricultural operations which may be a source of pollution through poor housekeeping practices.

□Handling of Equipment and Containers

This subcategory includes washing of equipment, handling and storage of pesticide or fertilizer compounds before use, and container disposal.

Construction, or Other

79

□Construction operations such as the building of highways, dams, industrial complexes and other structures in or near waterways, are a frequent source of pollution.

The following are examples of the "other" category.

□Large residential or custodial facilities not connected to municipal sewers but having their own system, for example, Federal, State, and church institutions, custodial institutions such as old folks homes, universities, etc.

□Domestic service operations in suburban or rural areas resulting in direct discharges such as spent-drycleaning solutions and wash and rinse water from coin laundries and dry cleaners, and spent floor and paint cleaners.

□Highway restaurants, motels, resort areas, and auto service areas which may or may not have their own treatment plant.

Appendix C

80 Industrial Operations

Industrial operations involve manufacturing or processing industrial and commercial products.

□Mining

Pollution from mining operations is most often caused by acid mine drainage from coal mines. In addition, coal washings and taconite tailing disposal are included here as well as side products from all other mining operations, including mining for ore, limestone, phosphate, etc.

□Chemicals

This subcategory includes manufacture of the following:

Basic chemicals such as acids, alkalies, salts, and organic chemicals;

Chemical products to be used in further manufacture such as synthetic fibers, plastic materials, dry colors, and pigments; and,

Finished chemical products for ultimate consumption (cosmetics, drugs and soaps); or to be used as materials or supplies in other industries (paints, fertilizers, and explosives).

□Food and Kindred Products

These operations include those involved in preparing and processing fresh and raw food items and other related products for the market. Examples include:

Sugar refining;

Canning, dehydrating, freezing, or curing of fruits, vegetables, or fish and other seafood;

Grain processing into flour, cereal products, etc.;

Slaughtering or meat packing;

Dressing poultry;

Any milk-handling operation including dairy farm, cheese factory, condensery, creamery, or ice cream plant;

Breweries, wineries, or distilleries operations;

Rendering plants or vegetable oil manufacture; and,

Animal feed manufacture.

□Textiles

Textile production covers all mill-type operations, including bleaching and dyeing processes.

□Metals

This subcategory includes all operations involving metals and plating (except mining), such as blast furnaces, smelting, rolling mills, pickling, heat treatment, etc. Common sources of wastes are metal cleaning solutions and plating vats which contain large amounts of acid, cyanide, copper, iron, chrome, and arsenic, all of which are specific causes of fish kills.

In addition, coke ovens and inefficient clarifier tanks in steel mills add toxic chemicals and turbidity to waste water.

□Petroleum

Petroleum covers oil or gas well drilling, oil refining, and the manufacture of any petroleum products.

□Paper and Allied Products

Paper and allied products covers paper-making in any of its stages, including resultant sludge deposits in streams or lakes.

□Rubber and Plastics

This subcategory includes manufacture from natural, synthetic, or reclaimed rubber. It also includes manufacturing involved in molding primary plastics for trade, and miscellaneous finished plastic products.

□Other Industrial

"Other" applies to those industries not specifically designated. The following are examples of potential entries under this item.

Lumber and wood products production including logging, chemical treatment, and sawmill operations through the finished product;

Leather and leather products processing and production;

Sand and gravel washing; and,

Automobile manufacturing.

Municipal Operations

Municipal operations are those activities that are the responsibility of the municipality in providing public utilities and other services.

□Sewerage System

Includes municipal sanitary and storm sewers and combined sewers. The wastes may be treated or untreated before they enter or leave the municipal system.

□Refuse Disposal

Refuse disposal concerns dumps, land fill projects, etc., used for disposal of solid wastes. The prime cause of fish kills from these sources is drainage from these areas, and deposits of ash from incinerators into surface water bodies.

□Water System

Fish kills charged to water system include kills caused by excessive use of chemicals for pipe cleaning and for algae, weed, and insect control in reservoirs. A common source of kills from this source is high chlorine solutions drained from new pipe lines, storage tanks, reservoirs, and pump stations, which are used to sterilize new water supply facilities.

□Swimming Pools

Fish kills charged to swimming pool operations generally result from cleaning operations or use of excessive chlorine. This subcategory applies if pool drainage is not connected to the city sewer system, regardless of who owns or operates the pool.

□Power (Public Service)

Power generation considered here is the production of power intended for consumption by the general public, versus power generation necessary to operate a manufacturing plant. Thermal pollution is of prime concern, although wastewaters such as that from boiler blowdown sometimes cause fish kills, most often during low flows.

□Pest Control

This subcategory of operations includes spraying of ponds, creeks, marshes, or use of other various methods of insect control when the poisons used are deposited directly into a waterway, as opposed to being conveyed to the waterway via a municipal sewer system.

82 **Transportation Operations**

The major source of pollution from these operations is accidental spillage into waterways of products in transit regardless of source, destination, or ultimate use.

□Rail

Fish kills charged to this subcategory are caused by accidental product spills, whether due to a wreck or by handling in yards. Waste discharge from rail-yard operations also applies here.

□Pipeline

Pipeline means those lines used to transport liquids or gases for long distances.

□Truck

A fish kill charged to this subcategory most often results from a wreck, leakage or careless handling in transit and at terminals.

□Air

This subcategory includes operation of airports, which are frequent producers of oily wastes and highly alkaline aircraft washrack drainage, as well as aircraft operations. It also includes aircraft crashes which should be considered in the same light as accidents involving trains, trucks, boats, etc.

□Barge or Boat

Barge or boat operations may result in pollution through spillage of products resulting from bilge discharges, fire, collision, sinking, or mishandling the products while in transit. Transit, in this case, includes transfer to or from the vessel while docked.

Unknown

The unknown category is applied to a fish kill when the pollution source operation cannot be determined or surmised, and the investigator is reasonably sure that the kill was due to pollution.

**Fish Kills
Caused by
Pollution
in 1975**